MINISTRY OF HEALTH OF UKRAINE
BUKOVINIAN STATE MEDICAL UNIVERSITY

"APPROVED"
Vice-rector of the higher education institution
for scientific and pedagogical work and international relations
_____ Oksana GODOVANETS
"28" 08 2025 p.

STUDY GUIDE (SYLLABUS)
for studying the subject

ETHICS AND METHODOLOGY OF SCIENTIFIC RESEARCH FUNDAMENTALS OF ACADEMIC INTEGRITY

Field of knowledge 22 Healthcare
(code and name of the field of knowledge)

Specialty 221 Dentistry
(code and name of the specialty)

Educational degree Doctor of Philosophy
(master, bachelor, junior bachelor)

Year of study 1

Form of study full-time, part-time
(full-time, part-time, distance)

Department pharmacology
(name of the department)

Approved at the methodological meeting of the Department of Pharmacology
Protocol № 1 dated 26 August 2025
Head of the Department of Pharmacology,
Professor Igor ZAMORSKII

Approved at the meeting of the subject methodological commission
for medical and biological disciplines of physiological and physicochemical profile
Protocol № 1 dated 29 August 2025
Chairman of the subject-methodical commission,
Professor Svitlana TKACHUK

Chernivtsi - 2025

1. GENERAL INFORMATION ABOUT THE ACADEMIC STAFF, WHO TEACH THE SUBJECT

Department	Pharmacology, Psychology and philosophy
Surname, first name of academic staff, position, academic degree, academic title, e-mail	Igor Zamorskii – DMedSc, professor, Head of the Department of Pharmacology, zamorskii@bsmu.edu.ua Tetiana Shchudrova – PhD, Assoc. prof. of the Department of Pharmacology shchudrova.tetiana@bsmu.edu.ua Nina Zoriy – PhD, Assoc. prof. of the Psychology and Philosophy, zoryj@bsmu.edu.ua
Web page of the department on the official website of the university	https://www.bsmu.edu.ua/farmakologiyi/ https://www.bsmu.edu.ua/psihologiyi-ta-filosofiyi/
Department website	Кафедра фармакології Кафедра психології та філософії
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2. GENERAL INFORMATION ABOUT THE DISCIPLINE

Status of the subject	normative
Number of credits	3
Total amount of hours	90
Lectures	20
Practical lessons	30
Individual work	40
Type of final control	credit

3. DESCRIPTION OF THE SUBJECT (ANNOTATION)

Contemporary global policy on the strategic management of higher education institutions is primarily aimed at ensuring educational quality. Ukraine has implemented rapid integration processes at the legislative level to bring its higher education system in line with the European educational space.

The academic discipline 'Ethics and Methodology of Scientific Research. Fundamentals of Academic Integrity" is a key discipline in the training of young scientists as it provides an understanding of the ethical standards of scientific research.

The programme of study for the Doctor of Philosophy degree is based on the Law of Ukraine 'On Higher Education', the 'Procedure for the Training of Candidates for the Degrees of Doctor of Philosophy and Doctor of Science in Higher Education Institutions (Scientific Institutions)' and the Regulations on the Training of Candidates for Higher Education Degrees of Doctor of Philosophy and Doctor of Science at the Bukovinian State Medical University.

The course covers:

The ethical principles of scientific research, which are a system of values, norms and principles that guide researchers, ensure academic integrity is respected and protect human rights and dignity. They also set bioethical requirements for medical and biological research.

The methodological foundations of scientific research are also covered, including the general principles, approaches, methods and logic of constructing scientific knowledge; forming hypotheses; formulating problems; selecting research methods; and analysing and interpreting results.

4. POLICY OF THE SUBJECT

4.1. List of normative documents:

- Regulations on the organization of the educational process: https://cutt.ly/ArUqCMFh;
- Instructions for assessing the educational activities of BSMU students in the implementation of the European credit transfer system of the educational process: https://cutt.ly/yrUqVPvn;
- Regulations on the appeal of the results of the final control of knowledge of higher education: https://cutt.ly/3rUqMAbV;
- Codex of Academic Integrity: https://cutt.ly/FrUq1ljK;
- Regulations on the prevention and detection of academic plagiarism: https://cutt.ly/MrUq6QAt;
- Regulations on the procedure and conditions for students to choose elective courses: https://cutt.ly/srUwo6Ci;
- Regulations on the procedure for recognising learning outcomes achieved through non-formal and/or informal education: https://cutt.ly/SrUwp1ie;
- Rules of conduct for students: https://cutt.ly/ErUq72rZ;
- Rules of internal labor regulations: https://cutt.ly/UrUwiACe.

4.2. Policy on adherence to the principles of academic integrity of higher education students:

- independent performance of educational tasks of current and final controls without the use of external sources of information;
- cheating during control of knowledge is prohibited;
- independent performance of individual tasks and correct registration of references to sources of information in case of borrowing of ideas, statements, information.

4.3. Policy on adherence to the principles and norms of ethics and deontology by higher education students:

- actions in professional and educational situations from the standpoint of academic integrity and professional ethics and deontology;
- compliance with the rules of internal regulations of the university, to be tolerant, friendly and balanced in communication with students and teachers, medical staff of health care institutions;
- awareness of the importance of examples of human behavior in accordance with the norms of academic integrity and medical ethics.

4.4. Attendance policy for higher education students:

- attendance at all training sessions (lectures, practical (seminar) classes, final modular control) is mandatory for the purpose of current and final assessment of knowledge (except for respectable reasons).

4.5. Deadline policy and completion of missed or uncredited classes by higher education students:

- reworks of missed classes are held according to the schedule of missed or uncredited classes and consultations.

5. PREREQUISITES AND POST-REQUISITES OF THE COURSE (INTERDISCIPLINARY LINKS)

List of academic disciplines on which the subject is based	List of academic disciplines for which the basis is laid as a result of studying the subject
History and Philosophy of Science. Open Science	PhD research practice
Ukrainian Language for Professional Use	Dissertation preparation and composition
Biostatistics	Research project management
Rhetoric	Work with scientometric databases
Modern Information Technologies	
English Language: Upper Intermediate	

6. AIMS AND OBJECTIVES OF THE COURSE

6.1. The aims of studying the course:

The aim of studying the academic subject 'Ethics and Methodology of Scientific Research: Fundamentals of Academic Integrity" is to develop a set of knowledge, skills and abilities related to formulating scientific hypotheses, goals and objectives, designing and planning scientific research, and studying the basic principles of academic integrity within a higher education institution and the ethical aspects of biomedical research.

6.2. The main objectives of the course:

- to formulate scientific hypotheses, goals and objectives of scientific research;
- to design and plan scientific research;
- to conduct scientific research involving humans and animals and to work with biomaterials;
- to adhere strictly to ethical and moral norms, rules and principles in research activities;
- to critically evaluate the latest developments in medicine and science;
- to adhere to the laws, principles and rules that govern the professional conduct of healthcare professionals and researchers, promoting the safe use of new medical technologies;
- to demonstrate respect for the life and dignity people, whose interests must always be valued above the interests of science or society;
- to identify and analyse conflict situations arising at the intersection of medicine, biology, philosophy and law, and determine specific ways to resolve them;
- to use new ethical principles (i.e. nooethics) to prevent a global ecological crisis.

7. COMPETENCES, THE FORMATION OF WHICH IS FACILITATED BY THE COURSE

7.1. Integral competence:

The ability to generate new ideas, solve complex practical and related interdisciplinary problems in dentistry, apply scientific and pedagogical methodologies, and conduct independent scientific research that results in novel findings of theoretical and practical significance.

7.2. General competencies:

GC1: The ability to solve complex problems based on a systematic, scientific worldview and a general cultural outlook, while adhering to professional ethics and academic integrity.
GC2: The ability to search for, process and analyse information from various sources.
GC3: The ability to think abstractly, analyse and synthesize.
GC4: The ability to work in an international context.

7.3. Professional (specialist) competencies:

SC3. Ability to present and discuss the results of scientific research and innovative projects in dentistry orally and in writing in the state language and one of the official languages of the European Union; ability to publish research results in leading international scientific publications.
SC5: Generating new ideas for the development of dental theory and practice; identifying problems; posing and solving research problems in the field of healthcare; and evaluating and ensuring the quality of dental research.
SC7: Critically analyse, evaluate and synthesize new and complex ideas in dentistry and related interdisciplinary issues.

8. LEARNING OUTCOMES

This academic discipline ensures the following programme learning outcomes (LOs):

L02: Develop a deep understanding of the general principles and methods of the health sciences, the main trends in their development and the methodology of scientific research. Apply this understanding to your own scientific research in dentistry and teaching practice.
LO3: Present and discuss the results of research and applied problems in dentistry freely and fluently

with specialists and non-specialists in state and foreign languages. Publish research results in scientific publications in leading international journals.
LO4: Formulate and test hypotheses, using appropriate evidence to substantiate conclusions, particularly the results of theoretical analysis, experimental research, statistical data analysis and available literature.
LO6: Apply general principles and methods of research in the field of healthcare, as well as modern methods, tools and digital technologies for conducting research in dentistry.
LO7: Develop and implement scientific and/or innovative medical projects that challenge existing knowledge, create new holistic knowledge and/or professional practice, and solve significant problems in medicine.
LO9: Plan and conduct research in dentistry and related interdisciplinary fields, adhering to the norms of professional and academic ethics, bioethics and good clinical practice (GCP). Critically analyse the results of your own research and that of other researchers in the context of the entire body of modern knowledge.
LO10: Develop and research models of processes and systems and use them effectively to obtain new knowledge and/or create innovative products in dentistry and related interdisciplinary fields.

By the end of the course, the PhD student will know:

- basic ethical principles of research, principles of academic integrity, and bioethical standards;
- research methodology, structure, and logic;
- current methods for finding, processing, analyzing, and interpreting research data.

By the end of the course, the PhD student will be able to:

- formulate a scientific problem, hypothesis, goals, and objectives of the study;
- apply ethical standards when planning and conducting research, including research involving humans or animals;
- select appropriate research methods and correctly interpret the results obtained.

By the end of the course, the PhD student will demonstrate:

- the ability to act responsibly and ethically in research and educational activities.
- critical thinking and the ability to engage in scientific argument.
- the ability to conduct independent research in compliance with ethical and methodological standards.

9. IINFORMATIONAL SCOPE OF THE COURSE

Content module 1. Ethics of scientific research

Specific objectives:

Know:
- the basic principles of bioethics and the ethical regulation of research;
- the legislative framework of Ukraine and international regulatory documents on ethics;
- the concept and forms of academic integrity;
- typical violations (e.g. plagiarism, fabrication, falsification and duplication of publications).

Be able to:
- identify and prevent violations of academic integrity;
- apply ethical principles when planning and conducting research.
- correctly format citations, references and bibliographies;
- justify the need for ethical review.

Demonstrate:
- adherence to the principles of academic integrity in one's own research;
- readiness for ethical responsibility to society and the professional community;
- willingness to engage in interdisciplinary interaction within the research environment.

Topic 1. Bioethical foundations of professional medical practice. Ethical principles of using laboratory animals in medical and biological research. History of bioethics and research ethics. Examples of unethical experiments. Ethics of research in medicine and biology. Principles and rules of bioethics. Regulatory documents on preclinical and clinical research. Philosophical and moral foundations of science. Values and goals of scientific knowledge.
Topic 2. Research ethics. Medical-ethical and legal issues of clinical research. International and national regulatory documents governing clinical research. Bioethics committees, legislative basis for their creation and operation. International documents on research ethics: the Declaration of Helsinki, the Belmont Report, GCP.
Topic 3. Compliance with the principles and rules of bioethics in conducting clinical trials in pediatric, psychiatric, and intensive care practice.
Topic 4. Compliance with the principles and rules of bioethics when conducting research on cadaveric material. Medical-ethical and legal issues of clinical trials of drugs and medical technologies and their implementation in clinical practice. International and national regulatory documents governing the conduct of clinical trials. Bioethics committees, legislative framework for their creation and operation. Bioethical and legal issues of euthanasia and physician-assisted suicide. Organ donation, organ procurement and gifting, use of stem cells. Ethical principles of research involving humans: respect for the individual, informed consent, confidentiality. Features of conducting clinical research with vulnerable categories of volunteers.
Topic 5. The concept of pharmacoeconomics and the principles of choosing economically feasible methods of diagnosis and treatment.

Content module 2. Methodology of scientific research

Know:
- the essence of science, its functions, and its role in societal development.
- the principles and levels of scientific research methodology;
- the structure of scientific research (object, subject, goal, task, hypothesis);
- the main methods of collecting, analyzing and interpreting scientific data;.

Be able to:
- formulate a scientific problem and hypothesis;
- plan a research design and select appropriate methods;
- search for and critically analyse scientific sources;
- apply statistical and informational methods of data processing;
- present results in the form of a scientific article, dissertation, abstract or presentation.

Demonstrate:
- the ability to present research results orally and in writing;
- an academic culture of scientific discussion.

Topic 1: Methodology of scientific research. Fundamentals of experimental design in theoretical and clinical medicine. The latest research methods and their informativeness, specificity and sensitivity. Biomarkers of various processes and conditions and their usefulness. Scientific research as a system: concept, structure and classification. The methodology of science: its levels, principles and place in scientific knowledge.
Topic 2: Basics of bibliographic searches; a list of scientometric databases and their significance; and leading information resources for searches. The legal basis of copyright and the principles of preventing plagiarism and falsification in scientific research. Formulation of a scientific problem: relevance, novelty, formulation of hypotheses, goals and objectives.
Topic 3: Fundamentals of evidence-based medicine. The concept of pharmacoepidemiological research. Levels of evidence.
Topic 4: Types of systematic error and how to avoid them. Responsibility for the reliability of scientific results.
Topic 5: The methodology of post-marketing studies. The pharmacovigilance system in Ukraine. Reporting adverse drug reactions. Analysis of scientific information, including searching databases such as PubMed, Scopus and Web of Science, and methods of writing a literature review. Design of scientific studies: experimental, observational and clinical studies.

Content module 3. Fundamentals of academic integrity

Know:

- the definition of academic integrity and its role in higher education and scientific research.
- the basic principles of academic integrity (honesty, trust, fairness, respect, responsibility and accountability)
- the types of academic integrity violations, such as plagiarism, self-plagiarism, fabrication, falsification, cheating, biased assessment and copyright violation;
- regulatory and legal documents that govern academic integrity.
- tools for detecting plagiarism;
- ethical aspects of publishing and collaborating in research teams.

Be able to:

- correctly format quotations, paraphrases and bibliographic references;
- distinguish between types of academic integrity violations and prevent them from occurring;
- use programmes to check texts for plagiarism;
- evaluate the quality and integrity of scientific works, including sources of information.
- construct educational or scientific texts that comply with academic standards.
- apply the principles of integrity when working collaboratively or reviewing scientific materials..

Demonstrate:

- the ability to write original texts;
- the ability to create correct references in accordance with the required standards;
- willingness to act ethically in education, science and professional activities;
- communication skills to prevent conflicts of interest, double standards and bias.

Topic 1: Academic integrity as a tool for improving the quality of education. Policies and tools for fostering academic integrity in higher education institutions. The concept of academic integrity: Its essence, principles and history of formation. The ethical foundations of university culture.
Topic 2: The values of academic integrity. Academic integrity in a higher education institution: the legal and ethical considerations. The process of creating a code of academic integrity. The activities of academic integrity committees. Regulatory and legal support for academic integrity.
Topic 3: The process of creating a code of academic integrity. The activities of academic integrity committees in higher education institutions. Codes of academic integrity in higher education institutions. Classification and examples of violations of academic integrity. Plagiarism, self-plagiarism, fabrication and falsification of data, cheating, copyright infringement, bribery and manipulation of assessment. Causes and consequences.
Topic 4: Creating an atmosphere of academic integrity in higher education institutions: the conditions. Fostering an academic culture. Plagiarism and the principles of correct referencing. Types of citation and paraphrasing; rules for indicating primary sources.
Topic 5. Procedures for establishing facts of academic integrity violations and enforcing academic responsibility. Academic integrity in scientific research. Data manipulation. Reproducibility and open data. Academic integrity in the context of the digitisation of education. E-learning and distance learning formats; artificial intelligence; academic risks (e.g. AI-generated content); and digital control tools.

10. STRUCTURE OF THE COURSE

Names of content modules and topics	Duration (h)			
	Total	including		
		Classroom		Self-study
		Lectures	Practicals	
1	2	3	4	5
Content module 1. Ethics of scientific research				
Lecture 1: The ethics of research in medicine and biology. The principles and rules of bioethics. Regulatory documents on preclinical and clinical	10	2	2	6

research. Practical session 1: The bioethical foundations of professional medical practice. The ethical principles of using laboratory animals in medical and biological research. Independent study 1: The use of modern scientific and technological achievements in conducting scientific research, and in determining its goals and objectives.				
Lecture 2: Medical, ethical and legal issues surrounding the implementation of clinical trials of drugs and medical technologies in clinical practice. International and national regulatory documents governing clinical research. Bioethics committees and the legislative framework for their creation and operation. Practical session 2: Research ethics. Medical, ethical and legal issues in clinical research. International and national regulatory documents governing clinical research. Bioethics committees: the legal basis for their creation and operation. Independent study 2. Bioethical, legal and social issues relating to medical genetics, genetic engineering, gene therapy and genetic reproductive technologies that modify human and animal nature. Practical session 3: Compliance with the principles and rules of bioethics when conducting clinical trials in pediatric, psychiatric and intensive care practice.	8	2	2	4
Lecture 3: Features of conducting clinical trials with vulnerable groups of volunteers. Independent study 3: Ethical issues of implementing scientific achievements in clinical practice. Practical session 4: Compliance with the principles and rules of bioethics when conducting research on cadaveric material. Bioethical and legal issues surrounding euthanasia and physician-assisted suicide. Organ donation, procurement and gifting; use of stem cells. Independent study 4. Selecting scientific research methods in accordance with set goals and objectives. Practical session 5: The concept of pharmacoeconomics and the principles of selecting economically feasible methods of diagnosis and treatment. Independent study 5: Medical, ethical, social and legal issues of human reproduction and new reproductive technologies. Bioethical issues of family planning (contraception and natural methods of family planning). The medical, ethical and legal assessment of artificial abortion. Independent study 6: Social ethics of medicine. Social justice and socio-ethical obligations. Socio-ethical problems of resource allocation in the healthcare system. Models of healthcare organisation and the practice of biomedical ethics. Independent study 7: The bioethical foundations of professional medical practice. Models of doctor–patient relationships. Principles of truthfulness and informed consent. Independent study 8: Bioethical aspects of dentistry, surgery, transplantology and transfusiology. Independent study 9: A healthy lifestyle as a condition for longevity, physical health, and spiritual development.	9	2	2	5

Man and disease. Disease as an experience and behaviour of the human personality. Applied aspects of medical psychology in biomedical ethics and deontology.				
Total on the content module 1	**38**	**6**	**10**	**22**
Content module 2. Methodology of scientific research				
Lecture 4: Methodology of Scientific Research. The fundamentals of experimental design in theoretical and clinical medicine. Formulation of scientific hypotheses, goals, objectives and the subject and object of scientific research. Development of scientific research designs and plans. Practical session 6: Methodology of scientific research. Fundamentals of experimental design in theoretical and clinical medicine. The latest research methods and their informativeness, specificity and sensitivity. Biomarkers of various processes and conditions and their usefulness. Practical session 7: The basics of bibliographic searches, a list of scientometric databases and their significance, and leading information resources for searches. The legal basis of copyright and the principles of preventing plagiarism and falsification in scientific research. Independent study 10: Searching for new scientific data to expand the scope of knowledge on the subject under study.	10	2	4	4
Lecture 5: Fundamentals of Evidence-Based Medicine. The concept of pharmacoepidemiological studies. Levels of evidence. The pharmacovigilance system in Ukraine. Practical session 8: Fundamentals of Evidence-Based Medicine. The concept of pharmacoepidemiological studies. Levels of evidence. Practical session 9: The methodology of post-marketing studies. The pharmacovigilance system in Ukraine. Reporting Adverse Drug Reactions. Independent study 11: Methods of statistical data processing in scientific research.	10	2	4	4
Total on the content module 2	**20**	**4**	**8**	**8**
Content module 3. Fundamentals of academic integrity				
Topic 1: The concept of academic integrity	4	2	2	
Topic 2: Successful educational practices, policies and tools for fostering academic integrity.	6			6
Topic 3: Academic integrity in higher education institutions: legal and ethical aspects.	4	2	2	
Topic 4: Codes of academic integrity in higher education institutions.	4	2	2	
Topic 5: Implementing academic integrity principles in higher education institutions.	4	2	2	
Topic 6: Creating an atmosphere of academic integrity in higher education institutions. Monitoring as a tool for ensuring educational quality and compliance with academic integrity principles. Student surveys.	2			2
Topic 7: Factors contributing to and preventing violations of academic integrity.	2			2

Topic 8: Types of academic responsibility. Procedure for identifying and establishing the facts of academic integrity violations.	4	2	2	
Total on the content module 3	**30**	**10**	**10**	**10**
Final session	2		2	
TOTAL HOURS	**90**	**20**	**30**	**40**

11. THEMATIC PLAN OF LECTURES

№	Name of topic	Duration (h)
1		2
2	The ethics of research in medicine and biology. The principles and rules of bioethics. Regulatory documents on preclinical and clinical trials.	2
3	The medical, ethical and legal issues surrounding the development and implementation of drugs and medical technologies in clinical practice. International and national regulatory documents governing the conduct of clinical research. Bioethics committees and the legislative framework for their establishment and operation.	2
4	Features of conducting clinical trials with vulnerable categories of volunteers.	2
5	Methodology of scientific research. The fundamentals of experimental design in theoretical and clinical medicine. Formulation of scientific hypotheses, goals, objectives and the subject and object of scientific research. Design and planning of scientific research.	2
6	Fundamentals of evidence-based medicine. The concept of pharmacoepidemiological research. Levels of evidence. The pharmacovigilance system in Ukraine.	2
7	The concept of academic integrity.	2
8	Academic integrity in higher education institutions: legal and ethical aspects.	2
9	Codes of academic integrity in higher education institutions.	2
10	Implementing the principles of academic integrity in higher education institutions.	2
	Total	**20**

12. THEMATIC PLAN OF SEMINARS

№	Name of topic	Duration (h)
1	The bioethical foundations of professional medical practice. Ethical principles that govern the use of laboratory animals in medical and biological research.	2
2	Research ethics. Medical, ethical and legal issues in clinical research. International and national regulatory documents that govern the conduct of clinical research. Bioethics committees and the legislative principles for their creation and operation.	2
3	Compliance with the principles and rules of bioethics when conducting clinical research in paediatric, psychiatric and intensive care practice.	2
4	Compliance with the principles and rules of bioethics when conducting research on cadaveric material. Bioethical and legal issues surrounding euthanasia and physician-assisted suicide. Organ donation, organ procurement, transplantation and the use of stem cells.	2
5	The concept of pharmacoeconomics and the principles of selecting cost-effective diagnostic and treatment methods.	2
6	The methodology of scientific research. Fundamentals of experimental design in theoretical and clinical medicine. The latest research methods and their informativeness, specificity and sensitivity. Biomarkers of various processes and conditions and their usefulness.	2

7	The fundamentals of bibliographic searches, a list of scientometric databases and their significance, and the leading information resources for searches. The legal basis of copyright and the principles of preventing plagiarism and falsification in scientific research.	2
8	The basics of evidence-based medicine. The concept of pharmacoepidemiological research. Levels of evidence. Types of systematic errors and how to avoid them. Responsibility for the reliability of scientific results.	2
9	Post-marketing research methodology. The pharmacovigilance system in Ukraine. Reporting adverse drug reactions.	2
10	Academic integrity as a tool for improving the quality of education. Policies and tools for promoting academic integrity in higher education institutions.	2
11	The values of academic integrity. Academic integrity in the environment of a higher education institution: legal and ethical aspects.	2
12	The process of creating a code of academic integrity. The activities of academic integrity committees in higher education institutions.	2
13	Creating an atmosphere of academic integrity in higher education institutions. Fostering an academic culture. Monitoring as a tool for ensuring educational quality and compliance with the principles of academic integrity. Student surveys.	2
14	Procedure for establishing facts of academic integrity violations and bringing academic responsibility.	2
15	Final session. Defence of the thesis project.	2
	Total	**30**

13. THEMATIC PLAN for self-study

№	Name of topic	Duration (h)
1	The use of modern scientific and technological achievements in research.	2
2	Bioethical, legal and social issues of genetics.	4
3	Ethical issues of implementing scientific achievements in clinical practice.	2
4	Choosing research methods in accordance with goals and objectives.	2
5	Medical, ethical, social and legal issues of human reproduction and new reproductive technologies.	2
6	Social ethics of medicine. Social justice and ethical obligations. Models of healthcare organisation and the practice of biomedical ethics.	2
7	Bioethical foundations of professional medical practice. Models of doctor-patient relationships. Principle of informed consent.	4
8	Medical, ethical, social and legal issues of human reproduction and new reproductive technologies.	2
9	The applied aspects of medical psychology in biomedical ethics.	2
10	Searching for new scientific data to expand the scope of knowledge on the subject under study.	4
11	Methods of statistical data processing in scientific research.	4
12	Successful educational practices, policies and tools for fostering academic integrity.	4
13	The conditions required to create an atmosphere of academic integrity in higher education institutions. International projects that promote academic integrity.	2
14	Factors contributing to and preventing violations of academic integrity.	2
	Total	**40**

14. LIST OF INDIVIDUAL TASKS *(if provided)*

- Prepare a report on a relevant topic.
- Develop a research design.

15. LIST OF TASKS FOR THE INDIVIDUAL TRAINING

- Review international and national regulatory documents on academic integrity and bioethics. Prepare a brief overview.
- Analyse examples of violations of academic integrity (such as plagiarism, data fabrication and duplicate publications) and suggest ways to prevent them.
- Plan your own dissertation research, including the problem, goals, objectives, hypothesis and justification for the choice of methods.
- Compare different methodological approaches (quantitative, qualitative and mixed methods) and assess their applicability to your field of research.
- Write a review of a scientific article, paying attention to the correctness of the methodology and compliance with ethical requirements.
- Develop an information sheet on the ethical requirements for research involving humans or animals in your specialty.
- Compile a bibliography on the dissertation topic, using modern international citation standards (APA, Vancouver, Harvard, etc.).
- Analyse your own text (e.g. a scientific article or dissertation fragment) for academic integrity using plagiarism detection software.

16. METHODS AND FORMS OF ASSESSMENT

Throughout the educational program, academic performance is monitored based on data on attendance at practical sessions and completion of self-study assignments. Upon successful completion of the course, the applicant receives a grade for academic performance and the number of credits in the individual study plan.
The results of the tests are assessed on a two-point scale: “pass” or “fail.”
The applicant receives a “pass” grade if they have completed all types of work specified in the curriculum for the discipline, attended all classes specified in the thematic plan for the relevant discipline, and has earned a total of at least 120 points.
The applicant receives a “fail” grade if there are any missed classes and the number of points for continuous assessment is less than the minimum.
The applicant's ongoing academic performance is assessed on a 4-point scale.

17. ASSESSMENT POINTS CALCULATION

The maximum number of points (200 points) that a student can score for the discipline is calculated by multiplying the number of points corresponding to the grade "5" - 20 points × 10 topics = 200.
The minimum number of points that a student must score when studying the discipline is calculated by multiplying the number of points corresponding to the grade "3" - 12 points × 10 topics = 120.
Obtaining the minimum number of points (120) per module is a prerequisite for grading "passed".

Traditional scale	Conversion into points
“5”	13
“4”	11
“3”	8
“2”	0

Course assessment
The course grade is determined as the sum of the points and is displayed on a 200-point scale. Conversion of the number of points in the discipline into grades on the ECTS scale and on the four-point (traditional) scale. The discipline points for students who have successfully completed the course are converted by the department into the traditional four-point scale according to the absolute criteria as shown in the table below.

Grade on a 200-point scale	Grade on a four-point scale
From 180 to 200 points	«5»
From 150 to 179 points	«4»
From 149 to the minimum number of points that a student must score	«3»
Below the minimum number of points that a student must score	«2»

18. RECOMMENDED LITERATURE

1. Altman D. G., Bland M. Statistical Methods for Medical Research. 2nd ed. London: Chapman & Hall; 2015.
2. Beauchamp T. L., Childress J. F. Principles of Biomedical Ethics. 8th ed. Oxford: Oxford University Press; 2019.
3. Bioethics. An Introduction, by Marianne Talbot. Cambridge University Press, 2012
4. Borry P., Schotsmans P., Dierickx K. Ethics and Governance of Biomedical Research. Cham: Springer; 2018.
5. Creswell J. W., Creswell J. D. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 5th ed. Thousand Oaks: SAGE Publications; 2018.
6. Emanuel E., Wendler D., Grady C. The Oxford Textbook of Clinical Research Ethics. Updated ed. Oxford: Oxford University Press; 2018.
7. Fletcher R., Fletcher S., Fletcher G. Clinical Epidemiology: The Essentials. 6th ed. Philadelphia: Wolters Kluwer; 2020.
8. Greenhalgh T. How to Read a Paper: The Basics of Evidence-Based Medicine. 6th ed. Hoboken: Wiley-Blackwell; 2019.
9. Introduction to Bioethics by John A. Bryant; Linda Baggott la Velle. Wiley-Blackwell, 2018
10. Ioannidis J. P. A. Meta-research: Methods and Applications. Oxford: Oxford University Press; 2022.
11. Kimmons R. Education Research Methodology. 2nd ed. Open Textbook Library; 2022.
12. Knottnerus J., Tugwell P. (eds.). Evidence-Based Medicine: A Framework for Clinical Practice. 4th ed. London: Elsevier; 2020.
13. Polit D. F., Beck C. T. Nursing Research: Generating and Assessing Evidence for Nursing Practice. 11th ed. Philadelphia: Wolters Kluwer; 2020.
14. Resnik D. B. The Ethics of Research with Human Subjects. 2nd ed. Cham: Springer; 2024.
15. Roberts L. F., Warner T. D. Academic Ethics: Today's Challenges, Tomorrow's Tools. 2nd ed. Cham: Springer; 2018.
16. Shamoo A. E., Resnik D. B. Responsible Conduct of Research. 3rd ed. Oxford: Oxford University Press; 2015.
17. Shchudrova T., Zamorskii I., Drachuk V., Kopchuk T. Bioethics: A Study Guide for Medical students. – Chernivtsi: Meduniversitet, 2022.
18. Steneck N. H., Heitman E. (eds.). Research Integrity: Best Practices and Case Studies. 2nd ed. London: Routledge; 2020.
19. The Basics of Bioethics by Robert M. Veatch; Laura K. Guidry-Grimes. Taylor and Francis; 2019
20. The Cambridge Textbook of Bioethics, by Peter Singer (Editor), A.M. Viens. Cambridge University Press; 2009
21. Thulesius H., Alvesson H. Research Methods and Scientific Thinking. Lund University Press; 2021.
22. Williamson K., Johanson G. Research Methods: Information, Systems and Contexts. 2nd ed. Cambridge: Chandos; 2017.

Information resources

1. Journal of Clinical Research & Bioethics https://www.walshmedicalmedia.com/clinical-research-bioethics.html
2. https://www.edx.org/learn/ethics/georgetown-university-introduction-to-bioethics
3. https://pll.harvard.edu/course/bioethics-law-medicine-and-ethics-reproductive-technologies-and-genetics?delta=1
4. https://lifelong-learning.ox.ac.uk/courses/bioethics-for-beginners-online
5. https://www.niehs.nih.gov/research/resources/bioethics

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