

Ministry of Science and Higher Education of the Russian Federation
Federal State Autonomous Institution of Higher Education
“National Research Nuclear University “MEPhI”

INSTITUTE OF ENGINEERING PHYSICS FOR BIOMEDICINE

APPROVED ИТС ИФИБ

Protocol No. 3.1

dated 30.08.2024

ACADEMIC COURSE OUTLINE

СУДЕБНАЯ МЕДИЦИНА / FORENSIC MEDICINE

Educational program track (speciality) [1] 31.05.01 General Medicine

Semester	Labour input, credits	Total course academic, hours	Lectures, hrs.	Practical sessions, hrs.	Laboratory sessions, hrs.	In the form of practical studies, hrs.	Independent studies, hrs.	Independent studies monitoring, hrs.	Course progress, Exam/Pass-fail exam/Term
9	3	108	16	40	0		52	0	PFE
Total	3	108	16	40	0	0	52	0	

ABSTRACT

During the course "Forensic Medicine," students learn the theoretical and practical foundations of forensic medicine, as well as develop clinical thinking and clinical behavior to the extent necessary for successful performance of professional duties, both in forensic and investigative practice and in healthcare.

1. ACADEMIC COURSE GOALS AND OBJECTIVES

The purpose of learning this course is to develop professional competencies in students based on theoretical and practical knowledge of forensic medical examinations to the extent necessary to successfully perform specialist duties assigned by judicial and investigative bodies in establishing the circumstances subject to proof in a specific case and in further improving the quality of medical and preventive care for the population.

Objectives:

- Improving skills in assessing morphofunctional, physiological states, and pathological processes in the human body to solve professional problems;
- Developing a system of knowledge and skills regarding the procedure and organization of forensic medical examinations, as well as the legal and organizational aspects of physician participation in procedural actions;
- developing the ability and readiness to participate in forensic medical examinations to establish the circumstances subject to proof in a specific case, assisting law enforcement officials at the scene, examining medical documents submitted by law enforcement agencies, and providing an expert opinion within the limits of professional competence;
- developing systems (expert) thinking to solve professional problems during examinations.

2. PLACE OF THE ACADEMIC COURSE IN THE MAIN HIGHER EDUCATION CURRICULUM

This course is part of the core curriculum. Successful mastery of this course requires knowledge, skills, and abilities acquired by students through mastering all preceding fundamental and clinical medical disciplines included in the curriculum.

The knowledge, skills, and abilities acquired through mastering this course are essential for solving professional problems.

3. DEVELOPED COMPETENCIES AND INTENDED LEARNING OUTCOMES

Universal and/or general professional competencies:

Competency code and title	Code and title of competency-based rubrics
ОПК-5 [1] – Capable of assessing morphofunctional and physiological states, as well as pathological processes in the human body to solve professional tasks.	3-ОПК-5 [1] – Know: - basic medical, pharmaceutical, and morphofunctional terminology, including Latin terms; - structure and functions of the human body, age-related, gender-specific, and individual characteristics of the structure and development of a healthy organism; - physical and chemical nature of processes occurring in a living organism; - patterns of

	vital activity of the organism, mechanisms of self-regulation and regulation; - features of regulation of the functioning of human body systems in pathological conditions; - patterns of occurrence, development, and outcome of typical pathological processes, the concept of sanogenesis; - etiology and pathogenesis of the most common diseases; - the concept of nosology, principles of disease classification; - principles of microorganism classification, their morphology, physiology, and impact on human health; - structure and functions of the human immune system. Y-OIIK-5 [1] – Be able to: - analyze mechanisms of disease development and manifestation; - recognize morphological and functional changes in cells, tissues, organs, and systems of the human body; - use basic physical-chemical and other natural science concepts and methods in solving professional tasks; - determine the cause of death and formulate a pathological diagnosis. B-OIIK-5 [1] – Possess skills in: - conducting microscopy and analyzing microscopic specimens; - correlating morphological and clinical manifestations of diseases; - assessing morphofunctional, physiological states, and pathological processes in humans; - clinical-anatomical analysis of autopsy results.
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4. PEDAGOGIC POTENTIAL OF THE COURSE

Pedagogic tracks/objectives	Pedagogic goals (code)
Professional education	Establishing conditions for: formation of responsibility for professional choice, professional development and professional decisions (B18)
Professional education	Establishing conditions for: formation of motivation to improve the quality of medical care to the population and the desire to follow the rules and norms of interaction between the doctor, colleagues and the patient, contributing to the creation of the most favorable environment for the patient's recovery (B34)

5. ACADEMIC COURSE STRUCTURE AND CONTENT

Academic course sections, their scope, terms of study and assessment:

No.	Academic course section name	Weeks	Lectures/ Practical (seminars)/ Laboratory sessions, hrs.	Compulsory current assessment (form*, week)	Maximum grade per section**	Section assessment (form*, week)	Competency-based rubrics
	<i>9 Semester</i>						
1	Forensic Medicine. Examination and Autopsy of a Cadaver	1-10	10/20/0	T-6 (5), T-8 (10), T-10 (10)	25	T-10	3-ОПК-5, У-ОПК-5, В-ОПК-5
2	Forensic Medical Traumatology. Toxicology	11-15	6/20/0	T-12 (10), T-13 (10), T-14 (5)	25	T-14	3-ОПК-5, У-ОПК-5, В-ОПК-5
	<i>Totals for 9 Semester</i>		16/40/0		50		
	Assessment events for 9 Semester				50	PFE	3-ОПК-5, У-ОПК-5, В-ОПК-5

* – abbreviated name of assessment

** – 100 maximum points per semester including a pass/fail exam and (or) an exam

Abbreviated current assessment forms and section assessment

Abbreviation	Full name
T	Testing
PFE	Pass/fail examination

SYLLABUS

Weeks	Topics / Content	Lect., hrs.	Pr./sem., hrs.	Lab., hrs.
	<i>9 Semester</i>	16	40	0
1-10	Forensic Medicine. Examination and Autopsy of a Cadaver	10	20	0
1 - 2	1. Forensic Medicine: Concept, Subject, System. The subject, objectives, and system of forensic medicine. The relationship of forensic medicine with other sciences. The relationship and mutual influence of cross-cutting sciences on the development of forensic medicine (physics, biology, forensic science). The place of forensic medicine in the system of legal education. Special issues of criminal and civil	All		
		2	4	0
		Online		
		0	0	0
3 - 4	2. Procedural and Organizational Foundations of Forensic Medicine in the Russia Forensic Medicine and Forensic Medical Examination. The concept, goals, and objectives of forensic medicine. The expert opinion as a source of evidence. The importance of forensic medical examination in the work of investigative bodies in	All		
		2	4	0
		Online		
		0	0	0

	resolving criminal and civil law matters, and its role in improving the quality of medical and preventive care for the population. Appointment of an examination. The basis, procedural procedure for appointing and conducting a forensic medical examination. Reasons for mandatory forensic medical examinations. Timeframes for their implementation and cases where mandatory procedures are required			
5 - 6	3. Dying and Death. Changes in the Corpse The Theory of Death. Clinical and Biological Death. Certification of Death, Its Initial Signs and Their Definition. Reliable Signs of Death. The Concept of Cause of Death. Forensic Classification of Death. Violent and Non-Violent Death. Types of Violent Death: Murder, Suicide, Accident. Death with Suspected Violence. Sudden Death. Changes Occurring in Organs and Tissues after Death and Their Diagnostic Significance. Skeletal muscle reactions to mechanical and electrical stimulation. Pupillary response to chemical stimulation. Cooling of the corpse, corpse thermometry. Phenomena of partial desiccation. Cadaveric spots, stages, and timeframes of development. Research methods. Muscle rigor mortis, the mechanism and timeframe of its development. Autolysis. Decay of corpses. The influence of environmental conditions on the course of putrefaction processes. Preservative forms of corpse changes: mummification, adipocere, peat tanning. Damage and destruction of corpses by animals, insects, and plants	All		
		2	4	0
		Online		
		0	0	0
7 - 8	4. Inspection of the crime scene and the corpse at the site of its discovery. Legal regulation of the crime scene inspection, organization of the inspection, and its participants. Inspection stages: static and dynamic. Duties of participants in the inspection of the crime scene and the corpse at the site of its discovery. Procedure and methods for corpse inspection. Detection, removal, packaging, and submission for examination of biological evidence. Classification of blood traces by shape and mechanism of formation. Principles of determining the presence of blood. Specific aspects of examining a crime scene and a corpse at the site of its discovery	All		
		2	4	0
		Online		
		0	0	0
9 - 10	5. Forensic Medical Examination. Examination of a Newborn's Corpse. Reasons for a forensic medical examination (investigation) of a corpse. Specific aspects of examining the corpses of unknown persons and dismembered corpses, skeletonized corpses, and skeletal remains. Methods for establishing corpse identity. Re-examination of the corpse. Exhumation. Examination of an exhumed corpse. Restoration of corpses. Questions for examination in the main types of violent death and their resolution. Sudden death and its causes. Conditions contributing to sudden death. The most common diseases leading to sudden death at different ages. Sudden death of	All		
		2	4	0
		Online		
		0	0	0

	young children. Key issues resolved during the examination of newborn corpses. Violent death of newborns and its causes. Infanticide			
11-15	Forensic Medical Traumatology. Toxicology	6	20	0
11 - 12	6. General Issues of Forensic Traumatology. Mechanical Trauma. General concepts of trauma and traumatism. Types of traumatism, their forensic characteristics, and prevention. Definition of bodily injury. Basic classifications of injuries (by damaging factor, nature, and harm to health). Forensic classification of bodily injuries. Mechanical injuries and their morphological characteristics: abrasions, bruises, dislocations, fractures, ruptures and avulsions of organs, crushing, separation, and crushing of body parts. Objectives and methods of injury examination in forensic medicine. Key issues addressed in the examination of mechanical injuries. Procedure for describing bodily injuries. Establishing the external factor and the conditions of its impact. Distinguishing between antemortem and postmortem injuries. Ability to act in the face of fatal wounds. Blunt injuries. Types of blunt objects. The mechanism of action of blunt objects and the nature of the injuries they cause. Injuries caused by parts of the human body (arm, leg, teeth). Injuries caused by objects held in the human hand. Injuries caused by falls.	All		
		2	8	0
		Online		
		0	0	0
13 - 14	7. Injuries and death from acute oxygen starvation, from exposure to high and low air temperatures. Concept of hypoxia and types of mechanical asphyxia. General characteristics of the course of hypoxia, its signs revealed during body examination. Strangulation asphyxia: hanging, noose strangulation, manual strangulation. Nooses, their types, and variations in their location on the neck. Causes of death due to noose strangulation. Strangulation groove in hanging and noose strangulation. Determining the presence of a strangulation groove during life. Forensic diagnosis of manual strangulation. Compression asphyxia. Compression of the chest and abdomen. Causes of death. Signs of compression asphyxia. Obstructive asphyxia. Occlusion of the mouth and nose, as well as the airway lumen, by foreign objects, loose bodies, gastric contents, or blood. Drowning. Death by drowning. Recognizing drowning. Laboratory tests for drowning. Death in water unrelated to drowning. Injuries on corpses recovered from water. Determining the duration of a corpse's stay in water. Death in confined spaces. Injuries and death from exposure to high and low temperatures. Local and generalized effects of high temperatures. Burns. Burn outcomes. Issues addressed in burn examinations. Examination of corpses found in the source of a fire. Determining the duration of flame exposure. Cremation of corpses. General and local effects of low temperatures. Death from hypothermia and its signs on the corpse. Conditions contributing to death from hypothermia. Freezing of corpses.	All		
		2	6	0
		Online		
		0	0	0

15	8. Forensic toxicology. The concept of poisons. Forensic classification of poisons. Poisonings and their origin. The dependence of the course of poisoning on the properties of the poison, the conditions of its administration and action, as well as the individual properties of the organism. Routes of poison introduction into the body. Excretion of poisons. Addiction to poisons. Features of the crime scene examination in case of suspected death from poisoning. Questions arising during the examination of poisonings. Characteristics of fatal poisonings: acids and alkalis; salts of heavy metals and arsenic; carbon monoxide and other poisons affecting the blood; ethylene glycol, dichloroethane and other technical liquids; organophosphorus and other pesticides; drugs. Poisoning with ethyl alcohol and alcohol-containing liquids. The effect of ethyl alcohol on the body. Methyl alcohol poisoning. Toxicomania and drug addiction. Food poisoning.	All		
		2	6	0
		Online		
		0	0	0

Abbreviated names of online options:

Abbreviation	Full name
EC	E-course
FtM	Full-text material
FtL	Full-text lectures
VM	Video materials
AM	Audio materials
Prs	Presentations
T	Tests
ERM	E-reference materials
IS	Interactive site

PRACTICAL SESSIONS TOPICS

Weeks	Topics / Content
	<i>9 Semester</i>
1 - 2	Subject, Method, System, and Objectives of Forensic Medicine. Subject, method, and system of forensic medicine, its content and objectives in the modern context. The importance of forensic medicine in the investigation of crimes against the life, health, and dignity of citizens. The relationship of forensic medicine with medical and legal sciences. The emergence of forensic medicine as a science and the main stages of its development.
3 - 4	Development of forensic medicine in the Russian Federation. The role of forensic medical knowledge in the practice of justice agencies. Organization of forensic medical examinations in the Russian Federation. Procedural and organizational foundations of forensic medical examinations in the Russian Federation. Procedural and organizational foundations of forensic medical examinations. Forensic medical examination at various stages of preliminary investigation and trial. Cases of mandatory appointment and conduct of forensic medical examinations. Types of forensic medical examinations. Participation of a forensic medical expert in investigative actions. Rights, duties, and responsibilities of an expert. Structure of the forensic medical service in the

	Russian Federation. Organization of forensic examination.
5 - 6	Dying and death. Changes in the corpse. Dying and Death. Classification of Death. Methods for Determining the Occurrence of Death. Early Postmortem Changes (Corpse Cooling, Rigor Mortis, Pleurisy, Partial Dehydration) and Their Expert Significance. Late Postmortem Changes (Decomposition, Mummification, Sebaceous Wax Formation, Peat Tanning) and Their Expert Significance. Fundamentals of Determining the Time of Death and Possible Expert Errors. Concept of Forensic and Pathological Examination of the Corpse. Basis and Procedure for a Forensic Examination of the Corpse. Laboratory Research Methods. Preparing a Conclusion. Exhumation. Reasons for Exhumation and Procedure. Specific Features of Examining the Corpse of an Unknown Person, Putrefactive and Frozen Corpses, Parts of a Dismembered Corpse, and Skeletonized Corpses. Forensic Identification Based on Bone Remains.
7 - 8	Inspection of the Crime Scene and the Corpse at the Place of Its Discovery. Corpse examination at the crime scene. The primary responsibilities of a forensic medical examiner during a crime scene examination. Specific aspects of the examination and key issues addressed during a cadaveric external examination in cases of gunshot wounds, traffic accidents, injuries from blunt and sharp objects, electric shock, exposure to high and low temperatures, poisoning, sudden and sudden death, mechanical asphyxia, and suspected foul play
9 - 10	Forensic medical examination. Examination of a newborn's corpse. Specific aspects of examining newborns' corpses. Sudden (unexpected) death. Actions of a police officer during a cadaver examination in the event of sudden death.
11 - 12	General issues in forensic traumatology. Mechanical trauma. Concept of a blunt, hard object. Characteristics of the damaging object and its mechanism of action in certain types of injuries (abrasions, bruises, wounds, bone fractures, etc.). Characteristics of injuries caused by falls from heights. Types of sharp instruments. Signs characterizing injuries from various types of sharp instruments. Concept of transport trauma and its types. Automobile trauma. Injuries from road accidents. Injuries from rail transport. Issues resolved by a forensic expert during the investigation of all types of transport accidents. Signs of gunshot injury. Classification of damaging factors of a gunshot. Establishing entrance and exit gunshot injuries. Determining the range of the shot. Determining the direction of the shot. Injuries from a hunting rifle. Injuries from grenades, fuses, mines, shells, and explosives. Issues resolved by forensic examination in gunshot wounds.
13 - 14	Injuries and death from acute oxygen deprivation, exposure to high and low temperatures. Types of mechanical asphyxia (strangulation asphyxia, obstructive asphyxia, compression asphyxia). External and internal signs of death from asphyxia. Hanging and strangulation with a noose. Manual strangulation. Establishing specific types of strangulation asphyxia. Strangulation from compression of the chest and abdomen (compression asphyxia); damage to the chest and organs in this type of death. External and internal signs of death from drowning. Establishing the duration of the body's exposure to water. Issues resolved by forensic examination in cases of death from various types of asphyxia. The effect of temperature on the human body (burn injury). General effects of high temperature (overheating of the body). Local effects of high temperature (burns). Features of forensic examination of burned and charred corpses. The effects of low temperatures on the human body (general and local). The origin of injuries in this type of death. Issues resolved by forensic examination in cases of death due to exposure to high and low temperatures. Effects of technical and atmospheric electricity
15	Forensic toxicology. The concept of poison. General information about toxic substances and the origin of poisoning. Conditions of action of a toxic substance: physical state, chemical composition,

	conditions of its dissolution, route of administration, dose, concentration, etc. Methods for diagnosing poisoning. Procedure for the removal, packaging, and submission of toxic substances and human internal organs for examination. Poisoning with specific poisons: caustic poisons (acids, alkalis, phenol), carbon monoxide, alcohol and its surrogates. Poisoning with sleeping pills and narcotics. Poisoning with pesticides. Food poisoning. Issues resolved by forensic examination in cases of poisoning
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6. EDUCATIONAL TECHNOLOGIES

The course is taught using methods based on modern advances in science and information technology in education. These methods are aimed at improving the quality of specialist training by developing students' creativity and independence. For this purpose, both traditional teaching methods (lectures, practical classes) and interactive practical classes are used.

1. Analysis of situational problems.
3. Practical lesson based on the case method (elements of forensic examination).

7. ASSESSMENT TOOLKIT

The assessment toolkit ensures verification of the intended learning outcomes achievement (competency-based rubrics) using current, midterm and interim assessment of the course.

The link between developed competencies and their assessment is presented in the following table:

Competency	Achievement rubrics	Assessment activity (Syl 1)
ОПК-5	3-ОПК-5	PFE, T-10, T-14, T-6, T-8, T-10, T-12, T-13, T-14
	У-ОПК-5	PFE, T-10, T-14, T-6, T-8, T-10, T-12, T-13, T-14
	В-ОПК-5	PFE, T-10, T-14, T-6, T-8, T-10, T-12, T-13, T-14

Educational achievement rubrics scales

The scale of each assessment activity varies from 0 to the maximum established point, inclusive. The final assessment of the course is performed on a 100-point scale and represents the sum of the points earned by the student in the section assessments, framework of current and interim assessment.

Sections and interim assessments are considered passed when the student achieves a minimum score equal to 60% of the maximum. The final grade is assigned only upon passing all sections and the interim assessment.

The final grade is assigned in accordance with the following scale:

Total score	Rating on a 4-point scale	Pass/fail examination	ECTS assessment
90-100	5 – « <i>excellent</i> »	« <i>pass</i> »	A
85-89	4 – « <i>good</i> »		B

75-84	3 – « <i>satisfactory</i> »		C
70-74			D
65-69			E
60-64			
below 60	2 – « <i>fail</i> »	« <i>fail</i> »	F

An “excellent” grade indicates a deep and solid mastery of the program material by a student who presents their answers consistently, clearly, and logically, is able to closely link theory with practice, and uses materials from monographic literature in their answers.

A “good” grade corresponds to a student’s solid knowledge of the material, who presents their answers competently and to the point, without any significant inaccuracies.

A “satisfactory” grade corresponds to the basic level of mastery of the material by the student, in which the main material has been mastered, but its details have not been assimilated, the answers contain inaccuracies, insufficiently correct wording and logical inconsistencies.

A grade “pass” corresponds to at least a basic level of mastery of the program material, in which the student possesses the necessary knowledge, skills, and abilities, and is able to apply theoretical principles to solve typical practical problems.

A grade “fail” is given to a student who lacks a significant understanding of the curriculum material, makes significant errors in their answers, or fails all required assignments. These students are generally unable to continue their studies without additional classes.

8. ACADEMIC COURSE EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT

CORE READING:

1. ЭИ Р62 Forensic Medicine. Textbook : учебник, Pigolkin Yu.I., Dubrovin I.A., Москва: ГЭОТАР-Медиа, 2023
2. ЭИ П 32 Атлас по судебной медицине : учебное наглядное пособие, Пиголкин Ю.И., Дубровин И.А., Горностаев Д.В., Москва: ГЭОТАР-Медиа, 2020

FURTHER READING:

1. ЭИ П 32 Морфологическая диагностика наркотических интоксикаций в судебной медицине : учебное пособие для вузов, Пиголкин Ю. И. [и др.], Москва: Юрайт, 2023
2. ЭИ Н 63 Осмотр трупа на месте происшествия : практическое пособие, Спиридонов В. А., Николаев П. М., Масаллимов И. Г., Москва: Юрайт, 2023
3. ЭИ Х 86 Судебная медицина. Виды экспертиз : учебное пособие для вузов, Хохлов В. В. , Москва: Юрайт, 2024

4. ЭИ Н 63 Судебная медицина. Осмотр трупа на месте происшествия : учебное пособие для вузов, Спиридонов В. А., Николаев П. М., Масаллимов И. Г., Москва: Юрайт, 2024
5. ЭИ Р 70 Судебная медицина. Практикум : учебное пособие для вузов, Баринев Е. Х., Спиридонов В. А., Ромодановский П. О., Москва: Юрайт, 2024
6. ЭИ Х 86 Судебная медицина: судебно-медицинская танатология : учебное пособие для вузов, Хохлов В. В. , Москва: Юрайт, 2024
7. ЭИ Л 47 Фрактологические исследования в судебной медицине : учебное пособие, Леонова Е.Н. [и др.], Москва: ГЭОТАР-Медиа, 2017

SOFTWARE:

No special softwares is required

LMS AND ONLINE RESOURCES

<https://online.mephi.ru/>

<http://library.mephi.ru/>

9. LOGISTICAL SUPPORT

1. Персональный компьютер: Моноблок Lenovo V540-24IWL All-In-One 23,8" i3-8145U 8Gb 256GB_SSD_M.2 Intel (64-305)
2. Мышь, клавиатура (64-305)
3. Интерактивная доска SMART SBM 685 (64-305)
4. Проектор SMART P109 (64-305)
5. Мебель лабораторная, стулья, шкафы для хранения (64-305)
6. Мойка лабораторная (64-305)
7. Шкаф лабораторный вытяжной "Лабтех" ШВ202 (64-305)
8. Бинокулярные микроскопы Levenhuk MED 10B (64-305)

10. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR STUDENTS

Recommendations for preparing for seminars.

The plan for practical classes, their topics, recommended readings, and the purpose and objectives of the course are communicated by the instructor during introductory classes or in the curriculum for the given course. Practical classes help students gain a deeper understanding of the course material and acquire skills in creative work with scientific literature.

Before you begin studying the topic, you need to familiarize yourself with the main questions of the practical lesson plan and the list of recommended literature.

When preparing for a practical lesson, you should first review lecture notes, textbook sections, and teaching aids to gain a general understanding of the topic's place and significance in the course being studied. Then, consult additional literature and take notes on the recommended sources.

In the process of studying the recommended material, it is necessary to understand the structure of the topic being studied, identify the main points, follow their logic and thereby delve into the essence of the problem being studied.

It is necessary to keep records of the material being studied in the form of notes, which, along with visual memory, also includes motor memory and allows for the accumulation of an individual fund of auxiliary materials for the rapid repetition of what has been read, for the mobilization of accumulated knowledge.

Basic note-taking forms: outline (simple and detailed), excerpts, and abstracts. During preparation, it is important to compare sources, consider the material being studied, develop an action plan, and carefully consider your oral presentation.

Recommendations for preparing for the test.

Test – 10-15-20-25 points. Each question – 1 (2) point.

TOPICS: Specified in each specific section

Answer requirements: A clear, detailed answer (2 points/question) or a choice of the correct answer to the test question (1 point/question).

Recommendations for preparing for a test/exam

Response requirements and evaluation criteria:

An "excellent" grade of 45-50 points on a test/exam is awarded for: a correct, complete, and logically constructed answer; the ability to use specialized terminology; the ability to illustrate theoretical principles with practical material.

A "good" grade of 35–44 points on the exam is awarded for: a correct, complete, and logically constructed answer with minor errors or inaccuracies; the ability to use specialized terminology, but incomplete conclusions or generalizations are made.

A "satisfactory" grade of 30–34 points on the exam is given for: a schematic, incomplete answer; inability to use special terms or ignorance of them; with one serious error;

An "unsatisfactory" grade of <30 points on the exam is given for: answering all questions on the ticket with serious errors; inability to use specialized terminology; inability to give examples of the practical use of scientific knowledge.

Admission to the exam in a discipline is granted based on a score of over 30 points.

A student can earn between 30 and 50 points per semester.

The minimum score for an exam answer is 30, the maximum is 50.

11. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR TEACHERS

Grading and criteria for tests, extended quizzes, homework, and the final test:

1) - Tests are graded according to the following formula: 1 point for every 1 correct answer. A student who has not started the test receives -1 point.

2) - Extended quizzes are graded according to the following formula: complete answer -2 points, incomplete answer -1 point, no answer -0 points, student who has not started the test -2 points.

3) - Homework must be completed by all students to be eligible for the final assessment. Late submissions will result in a deduction of -1 point from the final score.

4) - Presentation report grading criteria. Conversion from a 100-point to a 10 (5)-point system

5) - Essay evaluation criteria. Maximum 10 points. May be upgraded to a 5-point system.

10 points are awarded if all essay writing requirements are met: the problem is identified and its relevance justified, a brief analysis of the issue is provided and a logically presented personal position is presented, conclusions are formulated, the article is fully analyzed, the length is maintained, and formatting requirements are met.

9 points are awarded if the following essay writing requirements are met: the problem is identified and its relevance justified, a brief analysis of the issue is provided and a logically presented personal position is presented, conclusions are formulated, the article is fully analyzed, but the length is not maintained and formatting requirements are not met.

8 points - the main essay requirements are met, but some shortcomings are present. In particular, there are inaccuracies in the presentation of the material; there is a lack of logical consistency in the judgments; The abstract's length is not maintained; there are omissions in the formatting.

7 points – the basic abstract requirements are met, but the following shortcomings are present: there are inaccuracies in the presentation of the material; there is a lack of logical consistency in the judgments; conclusions are not formulated, the abstract's length is not maintained; there are omissions in the formatting.

6 points – there are significant deviations from the abstracting requirements; the topic is only partially covered; there are factual errors in the abstract's content, conclusions and a personal point of view on the problem are missing.

5 points – there are significant deviations from the abstract requirements: the topic is only partially covered; there are factual errors in the presentation of materials and methods, conclusions and a personal point of view on the problem are missing, the format is not maintained.

4 points – there are significant deviations from the abstract requirements: the relevance of the topic is not disclosed; Factual errors were made in the presentation of materials and methods, conclusions and personal perspective on the problem are missing, and the format is not followed.

3 points – there is no analysis of the relevance of the research topic, approaches, and methods used, although the formal length of the abstract is met.

2 points – the abstract topic is not covered, revealing a significant misunderstanding of the problem. However, the abstract length and formal requirements are met.

1 point – the abstract topic is not covered, revealing a significant misunderstanding of the problem.

0 points – the student did not submit an abstract.

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