

INSTITUTE OF ENGINEERING PHYSICS FOR BIOMEDICINE

APPROVED ИТС ИФИБ

Protocol No. 3.1

dated 30.08.2024

**ACADEMIC COURSE OUTLINE**

**ГЕМАТОЛОГИЯ / HEMATOLOGY**

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

<b>Semester</b>	<b>Labour input, credits</b>	<b>Total course academic, hours</b>	<b>Lectures, hrs.</b>	<b>Practical sessions, hrs.</b>	<b>Laboratory sessions, hrs.</b>	<b>In the form of practical studies, hrs.</b>	<b>Independent studies, hrs.</b>	<b>Independent studies monitoring, hrs.</b>	<b>Course progress, Exam/Pass-fail exam/Term</b>
8	3	108	20	40	0		48	0	PFE
Total	3	108	20	40	0	40	48	0	

## ABSTRACT

The discipline includes sections that provide theoretical knowledge and practical skills in the diagnosis, treatment, and prevention of blood system diseases. The discipline allows specialists to improve their general medical knowledge and ability to make decisions based on their acquired competencies.

### 1. ACADEMIC COURSE GOALS AND OBJECTIVES

The aim of the course is to provide students with basic knowledge, skills, and abilities in diagnostic and therapeutic approaches to hematological diseases.

Objectives:

- to familiarize students with the basic principles of theoretical hematology
- to develop students' awareness of oncological issues
- to study the main locations of malignant diseases, their early diagnosis and prevention
- to study modern principles of treatment of hematological patients
- to study the organization of dispensary observation
- to study the rehabilitation in hematology

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

The discipline is a part of the educational program developed by participants in educational relations. It is a clinical discipline and contributes to the development of professional competencies, supplementing and deepening the knowledge, skills, and abilities acquired through the study of other clinical disciplines.

The study of this discipline is preceded by the study of the following disciplines: Normal and Pathological Anatomy, Normal and Pathological Physiology, Immunology, Topographic Anatomy and Operative Surgery, Pharmacology, Radiopharmaceuticals, Propaedeutics of Internal Diseases, General Surgery, Radiological Diagnostics.

### 3. DEVELOPED COMPETENCIES AND INTENDED LEARNING OUTCOMES

Universal and/or general professional competencies:

Competency code and title	Code and title of competency-based rubrics
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Professional competencies in compliance with the goals and professional knowledge areas:

Professional activity goal	Professional activity knowledge area	Professional competency code and title; Based on the professional standard, experience analysis	Code and title of competency-based rubrics
medical			

<p>Diagnostics of diseases and pathological conditions of the patients.</p>	<p>Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population</p>	<p>IIK-3.2 [1] - Capable of conducting patient examinations to establish a diagnosis</p> <p><i>The base:</i> Professional standard: 02.009</p>	<p>3-IIK-3.2[1] - Know: - clinical diagnosis establishment algorithm; - patient history-taking and physical examination methodology; - laboratory and instrumental research methods for health assessment to establish a diagnosis; - semiotics of diseases of different organs and systems; - structure, principles of the current International Statistical Classification of Diseases and Related Health Problems (hereinafter - ICD).;</p> <p>Y-IIK-3.2[1] - Be able to: - conduct patient history-taking and physical examination; - interpret history, physical examination data, laboratory and instrumental results to recognize a condition or establish the presence/absence of a disease, establish a diagnosis; - distinguish and recognize in each specific case tissue damage, the reaction to it, and the form of adaptability; - develop a patient examination plan, justify the necessity and scope of laboratory and instrumental examination; - identify main pathological conditions, symptoms and syndromes, nosological forms in the patient according to the current ICD.;</p> <p>B-IIK-3.2[1] - Possess skills in: - patient history-taking and physical examination; Formulating a preliminary diagnosis; - developing a patient examination plan; Interpreting laboratory and</p>
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			instrumental results; - establishing a diagnosis considering the current ICD
Providing primary medical care in outpatient settings and day hospital settings.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	<p>IIK-3.3 [1] - Able to provide primary medical care in an outpatient setting</p> <p><i>The base:</i> Professional standard: 02.009</p>	<p>3-IIK-3.3[1] - Know: - general issues of organizing medical care for the population and organizing medical care for the adult population in outpatient settings, including at home; - features of medical care using telemedicine technologies; - Clinical picture, differential diagnosis, features of the course of the disease, complications and outcomes of internal diseases; - diagnostic criteria for the most common diseases of internal organs and systems; - indications for referring patients for specialist consultations according to clinical guidelines and considering relevant medical care standards; - indications for referring patients for specialized medical care in inpatient settings and day hospitals according to clinical guidelines and considering relevant medical care standards; - features of managing and treating elderly patients in outpatient settings. ;</p> <p>Y-IIK-3.3[1] - Be able to: - perform differential diagnosis of internal diseases; - monitor the course of physiological pregnancy; - justify the need for referring patients to specialist consultations; - recognize the main and concomitant diseases; - assess disease or condition</p>

			<p>severity - the degree of organ and/or system damage or functional impairment due to the disease/condition or its complications; - determine management, examination and treatment tactics for patients with specific diseases (nosological units) depending on disease severity and condition, according to clinical guidelines and considering relevant medical care standards.;</p> <p>B-IIIK-3.3[1] - Possess skills in: - conducting differential diagnosis with other diseases/conditions, including emergencies; - interpreting data obtained from patient consultations with specialists; - prescribing additional tests to clarify the diagnosis; - formulating a clinical diagnosis; - prescribing treatment according to clinical guidelines and considering relevant medical care standards.</p>
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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>8 Semester</i>						
1	The First Section	1-8	10/20/0	T-8 (25)	25	T-8	3-ПК-3.2, Y-ПК-3.2, B-ПК-3.2, 3-ПК-3.3, Y-ПК-3.3, B-ПК-3.3
2	The Second Section	9-15	10/20/0		25	TstP-15	3-ПК-3.2, Y-ПК-3.2, B-ПК-3.2, 3-ПК-3.3, Y-ПК-3.3, B-ПК-3.3
	<i>Totals for 8 Semester</i>		20/40/0		50		
	<b>Assessment events for 8 Semester</b>				50	PFE	3-ПК-3.2, Y-ПК-3.2, B-ПК-3.2, 3-ПК-3.3, Y-ПК-3.3, B-ПК-3.3

\* – 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
TstP	Test paper
PFE	Pass/fail examination

## SYLLABUS

Weeks	Topics / Content	Lect., hrs.	Pr./sem., hrs.	Lab., hrs.
	<i>8 Semester</i>	20	40	0
<b>1-8</b>	<b>The First Section</b>	10	20	0
1 - 4	<b>Investigations into the human hemostasis system in normal conditions and in various pathological states</b> Study of the hematopoietic system and blood composition in experiments and in humans (in embryogenesis and fetogenesis, in terms of age, both in normal conditions and in various pathological states) using morphological, histochemical,	All		
		4	10	0
		Online		
		0	0	0

	immunological, genetic, molecular biological, cultural, and other research methods. Research into the human hemostasis system in normal conditions and in various pathological conditions and diseases using molecular genetic, coagulological, clinical, biochemical, biophysical, and integral methods of assessing the blood coagulation system. Study of problems of rheology, hemodynamics, and hemostasis disorders using mathematical modeling and medical biophysics methods. Surgical and orthopedic methods of correction in patients with hemostasis disorders.			
5 - 8	<b>Diagnosis and study of the clinical course of hereditary and acquired diseases of the blood system</b> Research into the etiopathogenetic mechanisms of the formation and development of hereditary and acquired diseases of the blood system, based on the achievements of natural and fundamental sciences (morphology, molecular and cellular biology, genetics, immunology, biochemistry, and others), including experimental ones. Here is a detailed description of the item. Diagnosis and study of the clinical course of hereditary and acquired diseases of the blood system, as well as pathological conditions arising in extreme conditions, using a wide range of laboratory, clinical, and instrumental studies, including radiation imaging methods, using methods of statistical analysis and generalization of clinical data.	All		
		6	10	0
		Online		
		0	0	0
<b>9-15</b>	<b>The Second Section</b>	10	20	0
9 - 12	<b>Treatment of blood system diseases</b> Study of indications, effectiveness, and mechanisms of treatment of blood system diseases; improvement of treatment tactics and strategies, including the use of gravitational surgery methods, prevention of blood system diseases, and medical and social rehabilitation of patients; development of new therapeutic drugs using methods of clinical pharmacology, bioengineering, and cell therapy. Study of critical condition syndromes arising from blood system diseases and treatment, as well as the introduction into clinical practice of new methods of intensive care for critical conditions, parenteral and enteral nutrition in immunocompromised patients. Experimental and clinical research on the mechanism of action of pharmacological agents used in intensive care for patients with blood system diseases.	All		
		6	10	0
		Online		
		0	0	0
13 - 15	<b>Emergency conditions in hematology.</b> Indications for the clinical use of donated blood and/or its components and blood products and blood conservation methods, prevention and treatment of post-transfusion reactions and complications, including infectious diseases, and ensuring the quality of donated blood components. Organization and provision of medical care, development of new organizational models and technologies for diseases of the blood system. Study of the quality of medical care for diseases of the blood system. Organization of blood and blood component donation, bone marrow and hematopoietic stem cell donation, including	All		
		4	10	0
		Online		
		0	0	0

	issues related to improving blood services. Statistical observation and epidemiology of blood system diseases (populational hematology).			
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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>8 Semester</i>
1 - 4	<b>The hematopoietic and immunogenic systems. Hematopoietic stem cell transplantation</b> Disorders of hematopoiesis and the immune system in blood diseases. Acute leukemias. Immune thrombocytopenia and thrombocytopeny. The hemostasis system and its disorders. Differential diagnosis and differentiated therapy of hemostasis disorders
5 - 8	<b>Leukemias and malignant chronic myeloproliferative neoplasms.</b> Chronic lymphoproliferative diseases. Malignant lymphomas
9 - 12	<b>Neutropenia. Infectious complications in immunocompromised patients.</b> Immune and myelotoxic arnulocytosis. Features of the clinical presentation and treatment of infectious complications in immunocompromised patients. Reactive changes in the blood and blood-forming organs in internal medicine.
13 - 15	<b>Emergency conditions in hematology.</b> Diagnosis and treatment of emergency conditions in hematology.

## 6. EDUCATIONAL TECHNOLOGIES

The teaching process utilizes methods based on modern achievements in science and information technologies in education. These methods are aimed at improving the quality of training by developing students' creative abilities and independence. To this end, both traditional teaching methods (lectures, clinical practical classes) and interactive forms of seminars and clinical case studies are used:

- training forms of practical classes (clinical situational tasks, case studies, role-playing in the form of clinical case studies or patient care);
- interactive clinical analysis with patient demonstrations;
- involvement of students in scientific preclinical and clinical research, preparation of presentation materials, reports, essays, or abstracts.

## 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)
ПК-3.2	3-ПК-3.2	PFE, T-8, TstP-15, T-8
	Y-ПК-3.2	PFE, T-8, TstP-15, T-8
	B-ПК-3.2	PFE, T-8, TstP-15, T-8
ПК-3.3	3-ПК-3.3	PFE, T-8, TstP-15, T-8
	Y-ПК-3.3	PFE, T-8, TstP-15, T-8
	B-ПК-3.3	PFE, T-8, TstP-15, T-8

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

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 Н99 Internal Diseases. Volume II : , Martynov A.I. [и др.], Москва: ГЭОТАР-Медиа, 2022
2. ЭИ Г33 Гематология : национальное руководство : практическое руководство, , Москва: ГЭОТАР-Медиа, 2024

### **FURTHER READING:**

1. ЭИ L85 Atlas of Clinical Hematology : , Loffler, Helmut. , Haferlach, T. , Rastetter, Johann. , Berlin, Heidelberg: Springer Berlin Heidelberg,, 2005
2. ЭИ F92 Immunohematology and Transfusion Medicine : A Case Study Approach, Friedman, Mark T. , West, Kamille A. , Bizargity, Peyman. , Cham: Springer International Publishing, 2016
3. ЭИ Д 64 Клинико-патофизиологические аспекты гематологических нарушений : учебное пособие для вузов, Долгих Т. И. [и др.], Москва: Юрайт, 2024

### **SOFTWARE:**

No special softwares is required

### **LMS AND ONLINE RESOURCES**

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

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

## **9. LOGISTICAL SUPPORT**

1. Персональный компьютер: Процессор CPU Intel Core i7-8700 (3.2GHz/12MB/6 cores)  
Материнская плата Gig (Клиническая база)
2. Мышь, клавиатура (Клиническая база)
3. Проектор SMART P109 (Клиническая база)
4. Кушетка медицинская (Клиническая база)

5. Монитор (Клиническая база)

6. Иное оснащение, предусмотренное порядками оказания медицинской помощи по соответствующему профилю (Клиническая база)

## **10. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR STUDENTS**

Lecture:

Taking lecture notes: briefly, schematically, and sequentially record the main points, conclusions, formulations, and generalizations; mark important ideas, highlight keywords and terms. Check terms and concepts using encyclopedias, dictionaries, and reference books, writing down definitions in your notebook. Identify questions, terms, and material that cause difficulties, mark them, and try to find answers in the recommended literature. If you are unable to understand the material on your own, you need to formulate a question and ask the teacher during a consultation or practical class.

Independent work:

Each student must prepare individually for the topics of the discipline by reading lecture notes and recommended literature. Independent work allows students to think in a relaxed environment, understand the information on the topic, and refer to reference literature if necessary. Careful reading and repetition of what has been read helps to fully grasp the content of the topic and structure knowledge.

In order for meaningful information on the subject to be remembered for a long time, it is advisable to study it in stages—by topic and in strict sequence, since subsequent topics are usually based on previous ones. That is why most of the independent work involves preparing for seminars, completing recommended assignments, preparing for colloquiums, completing and defending individual homework assignments, and preparing for laboratory work. To successfully complete these tasks, each student has the opportunity to use the methodological support developed by the department.

It is best for students to plan the time needed for independent work on this discipline for the entire semester, providing for regular review of the material covered. The material summarized in the lectures should be regularly supplemented with information from the literary sources listed in the course syllabus. For each of the topics for independent study listed in the course syllabus, students should first read the recommended literature and, if necessary, make a brief summary of the main provisions, terms, and information that need to be memorized and are fundamental to this topic and for mastering subsequent sections of the course. To expand your knowledge of the discipline, we recommend using Internet resources.

When working independently, it is recommended to take notes on the material being studied (worked through). Notes can be basic, containing only the main key points, but sufficient to provide a complete answer to the question. Notes can also be detailed. The length of the notes is determined by the student.

When working with educational/scientific literature, students are advised to take notes as they read in the form of a simple or detailed plan, compile abstracts, and prepare annotations of what they have read. Having such notes can earn you extra points for activity.

When starting to prepare for a practical class, it is necessary, first of all, to refer to lecture notes, sections of textbooks and teaching aids to get a general idea of the place and significance of the topic in the course being studied.

Then work with 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 thus delve into the essence of the problem being studied. It is necessary to take notes on the material being studied in the form of a summary, which, along with visual memory, also involves motor memory and allows you to accumulate an individual fund of auxiliary materials for quick repetition of what you have read and for mobilizing the accumulated knowledge.

#### Clinical practical classes

The most important stage of practical classes is independent work by students to master practical skills: in simulated conditions, at the patient's bedside, in the functional diagnostics room, etc. Depending on the specific topic of the class, students independently (or under the supervision of a teacher) interview patients, conduct clinical examinations, observe instrumental diagnostics, study the results of additional examinations, summarize the data, present it in the form of fragments of medical histories, and report the results to the teacher. Achievements are assessed individually for each student, the degree of development of practical skills and their theoretical foundations.

Clinical reviews of thematic patients are conducted for the entire group or through student participation in clinical reviews and periodic scientific and practical conferences at medical organizations where practical training takes place. During the reviews, the instructor evaluates each student's active participation and ability to think clinically.

Solving situational tasks proposed by the teacher, which develop clinical thinking and force students to use the knowledge they have acquired in various subjects related to their specialty.

Active and interactive forms of teaching are widely used in the educational process (work in small groups, stimulation of creative activity, use of computer training programs, conference-style classes).

The teacher monitors students' independent work, preparation of reports, research work, work with patients together with the teacher, interpretation of data from additional research methods, and completion of medical documentation.

#### Test:

Familiarization with primary and supplementary literature, including reference publications, foreign sources, summaries of key provisions, terms, and information that must be memorized and are fundamental to this topic. Compilation of annotations for the literary sources read, etc.

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

TOPICS: the topics of a specific section are indicated

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

#### Essay:

Search for literature and compile a bibliography, use 3 to 5 scientific works, present the authors' opinions and your own judgment on the selected issue; presentation of the main aspects of the problem.

#### Preparation for the exam/test:

When preparing for the exam (test), it is necessary to focus on lecture notes, recommended literature, etc.

#### Requirements for answers and assessment criteria:

A grade of "excellent" (45-50 points) on the test/exam is given for: correct, complete, and logically structured answers; the ability to use special terms; the ability to illustrate theoretical positions with practical material.

A grade of “good” (35–44 points) is given for: a correct, complete, and logically structured answer with minor errors or inaccuracies; the ability to use specialized terms, but with conclusions or generalizations that are not entirely complete.

A “satisfactory” grade (30–34 points) on the exam is given for: a schematic, incomplete answer; inability to use special terms or ignorance of them; one gross error.

A grade of “unsatisfactory” (< 30 points on the exam) is given for: answers to all questions on the exam paper with gross errors; inability to use special terminology; inability to give examples of the practical application of scientific knowledge.

Admission to the exam in the discipline is granted with a score of more than 30 points.

During the semester, a student can earn from 30 to 50 points.

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

## **11. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR TEACHERS**

In the process of organizing and conducting the educational process, teachers must be able to plan and organize their time, which allows them to distribute the workload and is an important condition for successful teaching of the discipline.

Teachers should actively participate in the educational process and prepare for it. The need for constant preparation for lectures, seminars, and practical classes is due to the need to reflect modern approaches, views, and data on topics and sections. When preparing for the educational process, it is necessary to study modern methodological recommendations, the results of scientific research, new technologies, etc.

The goal of the teacher's work should be the effective perception of the material by the students. The following types of educational activities are implemented in the teaching process: lectures, practical classes, and independent work. When implementing various types of educational activities, the teacher should use educational technologies (creation of interactive presentations, educational computer programs, thinking development technologies (effective lectures, tables, group work, etc.)).

During practical classes, students' mastery of lecture material is assessed, patients are supervised, and practical skills are evaluated.

Visual aids, surgical instruments, training devices, device simulators, or demonstrations of procedures in real-life conditions are used to demonstrate and train practical skills. To assess their clinical thinking skills, students are given situational problems, clinical histories, test assignments, clinical case studies, and visits to medical conferences, consultations, and scientific symposiums.

Active and interactive forms of teaching are widely used in the educational process (work in small groups, stimulation of creative activity, use of computer training programs, conference-style classes).

The instructor supervises students' independent work, preparation of reports, research work, work with patients together with the instructor, interpretation of data from additional research methods, and completion of medical documentation.

Working with educational literature is considered a type of educational work and is carried out within the hours allocated for its study. Each student is provided with access to the electronic library collections of the institute and department.

The training of students contributes to the development of their skills in communicating with patients, taking into account ethics and deontology.

Independent work contributes to the formation of skills in working with patients, working with literature, analytical thinking, filling out documentation, accuracy, and discipline.

The initial level of students' knowledge is determined by testing, and ongoing assessment of subject mastery is determined by oral questioning during classes, during clinical reviews, when solving typical situational problems, and in test answers.

At the end of the course, there is an interim and final assessment of knowledge using tests, practical skills checks, and situational problem solving.

Grading and criteria for tests, written assignments, homework, and final exams:

1) - Tests are graded on a scale of 1 point per correct answer. If a student did not attempt the test, they receive (-1) point.

2) - Tests with detailed answers are graded according to the following scheme: complete answer – 2 points, incomplete answer – 1 point, no answer – 0 points, student did not attempt the test – (-2) points.

3) – Homework must be completed by all students in order to be admitted to the final assessment. Late work will result in a deduction of (-1) point from the final score.

4) - Criteria for evaluating presentations. Conversion from a 100-point to a 10 (5)-point system

5) - Criteria for evaluating essays. Maximum 10 points. May be converted to a 5-point system

10 points are awarded if all the requirements for writing an essay are met: the problem is identified and its relevance is justified, a brief analysis of the problem under consideration is made and one's own position is logically presented, conclusions are formulated, the article is analyzed in full, the volume is maintained, and the formatting requirements are met.

9 points are awarded if the following requirements for writing an abstract are met: the problem is identified and its relevance is justified, a brief analysis of the problem under consideration is provided, and the author's position is logically presented, conclusions are formulated, the article is analyzed in full, but the length is not maintained and the formatting requirements are not met.

8 points – the basic requirements for the abstract have been met, but there are some shortcomings. In particular, there are inaccuracies in the presentation of the material; there is a lack of logical consistency in the arguments; the abstract does not meet the required length; there are omissions in the formatting.

7 points – the main requirements for the abstract have been met, but the following shortcomings have been made: there are inaccuracies in the presentation of the material; there is no logical sequence in the arguments; conclusions have not been formulated, the volume of the abstract has not been maintained; there are omissions in the formatting.

6 points – there are significant deviations from the requirements for referencing; the topic is only partially covered; there are factual errors in the content of the abstract, there are no conclusions or personal opinion on the issue.

5 points – there are significant deviations from the requirements for the abstract: the topic is only partially covered; there are factual errors in the presentation of materials and methods, there are no conclusions or personal opinion on the issue, the format is not consistent.

4 points – there are significant deviations from the requirements for the abstract: the relevance of the topic is not disclosed; factual errors are made in the presentation of materials and methods, there are no conclusions and personal opinion on the problem, the format is not consistent

3 points – there is no analysis of the relevance of the research topic, approaches, and methods used, while the length of the abstract is formally observed.

2 points – the topic of the abstract is not revealed, there is a significant misunderstanding of the problem. At the same time, the length of the abstract and formal requirements are met.

1 point – the topic of the essay is not revealed, there is a significant misunderstanding of the problem.

0 points – the essay has not been submitted by the student.

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