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MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION
Federal State Autonomous Educational Institution of Higher Education
"NORTH CAUCASUS FEDERAL UNIVERSITY"

APPROVED BY
Acting Director of the Institute
Advanced Engineering
Cand. Tech. Sci., Associate Professor
A.A. Porokhnya

WORK PROGRAM OF THE DISCIPLINE
Mathematical Logic and Theory of Algorithms for AI

Field of study	11.03.02 Infocommunication Technologies and Communication Systems
Profile	Intelligent Data Processing in Infocommunication Systems and Networks
Year of start of training	Oct. 2026
Form of study	Full-time
Implemented in a semester	3

Introduction

1. Purpose

The fund of assessment tools for the discipline "Mathematical Logic and Theory of Algorithms for AI" is designed to objectively assess the level of competence formation.

2. FOS is an appendix to the program of the discipline "Mathematical Logic and Theory of Algorithms for AI".

3. The developer is V.P. Mochalov, Associate Professor of the Department of Digital, Robotic Systems and Electronics of the Institute of Advanced Engineering.

4. An examination of the FOC was carried out.

Members of the expert group:

Chairman: V.P. Mochalov, Professor of the Department of Digital, Robotic Systems and Electronics of the Institute of Advanced Engineering.

Members of the Commission:

S.V. Yakovlev, Associate Professor of the Department of Digital, Robotic Systems and Electronics of the Institute of Advanced Engineering.

S.V. Melnikov, Senior Researcher of the Interdisciplinary Training and Research Center for Agricultural Technologies, Associate Professor of the Department of Digital, Robotic Systems and Electronics of the Institute of Advanced Engineering.

Representative of the employer's organization:

Mironov V.A., General Director of Orintex LLC.

Expert opinion: The FAT for the discipline allows you to assess the level of competence formation. Start approbation.

5. The validity period of the FAT is determined by the period of implementation of the educational program.

1. Description of indicators and assessment criteria at various stages of their formation, description of assessment scales

Levels of competence formation, indicators	Levels of competence formation			
	The minimum level has not been reached (unsatisfactory) 2 points	Minimum level (satisfactory) 3 points	Intermediate level (good) 4 points	High level (excellent) 5 points
Competency: OPK-1				
ID-1OPK-1 – Has basic knowledge, obtained in the field of mathematical and (or) natural Sci.	Does not possess basic knowledge	Allows serious mistakes in The field of probability theory and mathematical statistics	Basically, he accurately selects the basic definitions of the theory probabilities and mathematical Statistics	Competently applies basic knowledge of probability theory and mathematical statistics
ID-2 _{OPK-1} – Uses in solving professional tasks, the knowledge gained in the field of mathematical and (or) natural sciences.	Difficult to use in solving professional tasks, the knowledge gained in the field of mathematical and (or) natural sciences.	Makes serious mistakes in solving professional tasks, the knowledge gained in the field of mathematical and (or) natural sciences.	Mostly accurately used in Solution professional tasks, the knowledge gained in the field of mathematical and (or) natural sciences.	Competently uses in solving professional tasks, the knowledge gained in the field of mathematical and (or) natural sciences. Precise and precise justifies his decision.
ID-3OPK-1 Possesses the skills of choosing models and methods for problem solving professional activity.	Does not speak skills of choosing probabilistic and statistical models and methods for solving problems of professional activity.	Poorly possesses the skills of choosing probabilistic and statistical models and methods for solving problems of professional activity.	Basically, has the skills of choice probabilistic-statistical models and methods for solving problems of professional activity.	Fully has the skills of choice probabilistic-statistical models and methods for solving problems professional
Competence: OPK-5				

Learning outcomes in the discipline: <i>Indicator:</i> ID-1OPK-5 Demonstrates methods of algorithm theory, System and Application Programming, the main Provisions and concepts in the field of computer programming	When conducting scientific research of physical objects and processes using experimental research methods, the child reveals ignorance of the laws of optics, makes mistakes that do not allow to establish the level of competence formation. Does not solve the problems of professional activity using modern information and communication technologies, including those of domestic developers	Demonstrates superficial knowledge of the laws of physical optics, makes significant mistakes when conducting scientific research of physical objects and processes using experimental research methods	Demonstrates knowledge of the laws of physical optics, but makes minor mistakes when conducting scientific studies of physical objects and processes using experimental research methods	Demonstrates a deep and complete knowledge of the laws of physical optics in conducting scientific studies of physical objects and processes using experimental research methods. Solves the problems of professional activity using modern information and communication technologies, including domestic ones. Developers
ID-2OPK-5 can to correlate knowledge in the field of programming, interpretation of what has been read, to identify and create information resources of global networks, educational content, and system testing tools The ID-3OPK-5 has Hands-on experience in software development and application	When processing the obtained experimental data using the methods of the theory of processing the results of experimental measurements, makes mistakes that do not allow to establish the level of competence formation. Does not solve the problems of professional activity based on bibliographic culture	Demonstrates superficial knowledge of the laws of physical optics, makes significant errors when processing the experimental data obtained using the methods of the theory of processing the results of experimental measurements	Demonstrates knowledge of the laws of physical optics, but makes minor errors in the processing of the experimental data obtained using the methods of the theory of processing the results of experimental measurements	Demonstrates a deep and complete knowledge of the laws of physical optics, processes the obtained experimental data using the methods of the theory of processing the results of experimental measurements, as well as in accordance with the requirements of regulatory documents. Solves the tasks of professional activity based on the bibliographic culture

ASSESSMENT TOOLS FOR CHECKING THE LEVEL OF COMPETENCE FORMATION

Job Number	Correct answer	Content of the question	Competence	Time for Completing the task
1.	Subject studies mathematical logic is the formalization of knowledge and reasoning.	What is the subject of mathematical logic?	OPK -1	5 minutes
2.	d	Conjunction takes true (logical unit) on sets a) (0, 0) b) (0, 1) c) (1, 0) d) (1, 1)	OPK -1	1 minute
3.	a, b, c	Conjunction takes false (boolean zero) on sets a) (0, 0) b) (0, 1) c) (1, 0) d) (1, 1)	OPK -1	1 minute
4.	b, c, d	The disjunction takes a true (logical unit) value on the sets a) (0, 0) b) (0, 1) c) (1, 0) d) (1, 1)	OPK -1	1 minute
5.	a	The disjunction takes false (boolean zero) on the sets a) (0, 0) b) (0, 1) c) (1, 0) d) (1, 1)	OPK -1	1 minute

6.	a, b, d	Implication takes the meaning of truth (logical unit) on sets a) (0, 0) b) (0, 1) c) (1, 0) d) (1, 1)	OPK -1	1 minute
7.	c	The implication takes false (logical zero) on the sets a) (0, 0) b) (0, 1) c) (1, 0) d) (1, 1)	OPK -1	1 minute
8.	a, d	Equivalence Accepts Significance truth (logical unit) on sets a) (0, 0) b) (0, 1) c) (1, 0) d) (1, 1)	OPK -1	1 minute
9.	b, c	Equivalence takes false (logical zero) on sets a) (0, 0) b) (0, 1) c) (1, 0) d) (1, 1)	OPK -1	1 minute
10.	a	The law of the algebra of logic $x \& x \equiv x$ refers to the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute

11.	a	The law of the algebra of logic $x \vee x \equiv x$ is related to the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
12.	b	The law of algebra of logic $x \& 1 \equiv x$ is related to the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
13.	b	The law of the algebra of logic $x \vee 1 \equiv 1$ is referred to as the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute

14.	b	The law of algebra of logic $x \& 0 \equiv 0$ is referred to as the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
15.	b	The law of the algebra of logic $x \vee 0 \equiv x$ is referred to as the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
16.	c	The law of logic algebra $x \& (y \vee x) \equiv x$ is referred to as the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute

17.	c	The law of the algebra of logic $x \vee (y \& x) \equiv x$ is referred to as the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
18.	d	The law of the algebra of logic $x \vee x \equiv 1$ is referred to as the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
19.	e	The law of logic algebra $x \& x \equiv 0$ is referred to as the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute

20.	f	The law of the algebra of logic $x \equiv \overline{\overline{x}}$ is referred to as the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
21.	g	Law Algebra logic $\overline{x \& y} \equiv \overline{x} \vee \overline{y}$ include To the laws a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
22.	g	The law of the algebra of logic $\overline{\overline{x \vee y}} \equiv x \& y$ is referred to as the laws of a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute

23.	g	Law Algebra logic $x \rightarrow y \equiv y \rightarrow x$ include To the laws a) idempotency b) for 1 and 0 c) Acquisitions d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
24.	a	The law of algebra of logic $x \& y \equiv y \& x$ is referred to the laws of a) commutative b) associative c) Distributive d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
25.	a	The law of the algebra of logic $\bar{y} \equiv y \vee x$ is referred to as the laws of a) commutative b) associative c) Distributive d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute

26.	b	The law of algebra of logic $x \& (y \& z) \equiv (x \& y) \& z$ is referred to as the laws of a) commutative b) associative c) Distributive d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
27.	c	The law of algebra of logic $x \& (y \vee z) \equiv (x \& y) \vee (x \& z)$ refers to To the laws a) commutative b) associative c) Distributive d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
28.	c	The law of algebra logics $\vee (y \& z) \equiv (x \vee y) \& (x \vee z)$ refer to To the laws a) commutative b) associative c) Distributive d) Exclusions of the third e) Contradictions f) double negation g) de Morgana h) Contrapositions	OPK -1	1 minute
29.	An utterance is understood as a grammatically correct declarative sentence, about which it can be said that it is either true or false.	Define the concept of "statements"	OPK -1	5 minutes

30.	A statement can be true, or false – there is no third option.	How is the law of the excluded middle formulated?	OPK -1	5 minutes
31.	The negation of the statement x is a new statement that will be true if, and only if, when the statement x is false.	Define negation.	OPK -1	5 minutes
32.	A conjunction (or logical multiplication) of two statements x and y is a new statement that will be true in one and only one case, when both the statements x and y are true.	Define a conjunction.	OPK -1	5 minutes
33.	A disjunction (or logical addition) of two statements x and y is a new statement that will be false if and only if both statements x and y are false.	Give a definition of disjunction.	OPK -1	5 minutes
34.	The implication "if x , then y " of the statements x and y is a new statement that will be false only in one case: when the first statement x is true, and the second in the case of y – falsely.	Define implication.	OPK -1	5 minutes
35.	Equivalence of two statements x and y is called New statement, which will be true if, and only if, statements x and y are true, or are false at the same time.	Define equivalence.	OPK -1	5 minutes
36.	Logical Function – These are a function that, like each of its variables, takes values from the set $\{0,1\}$.	Define a logical function.	OPK -1	5 minutes
37.	Logical Function is self-dual if it coincides with its dual form.	Give Definition self-dual logical function.	OPK -1	5 minutes

38.	A logical function f is said to be monotonic if for any two ordered sets α and β inequality $f(\alpha) \leq f(\beta)$.	Define a monotonic logical function.	OPK -1	5 minutes
39.	Logical Function is called linear if it can be represented in polynomial.	Define a linear logic function.	OPK -1	5 minutes
40.	A Boolean function preserves 0 when zero set She Accepts Value 0.	Define a Boolean function that preserves 0.	OPK -1	5 minutes
41.	A Boolean function retains 1 when, on a set consisting of 1, it assumes a value of 1.	Define a logical function that preserves 1.	OPK -1	5 minutes
42.	In order for a certain set of Boolean functions to be functionally complete, it is necessary and sufficient that it is not a subset of any of the linear classes, self-dual, monotonic, as well as functions that preserve 0 and 1.	Formulate the Post theorem.	OPK -1	5 minutes
43.	$N = 2n$	How much strings Contains Table truthfulness logical function of n variables?	OPK -1	5 minutes
44.	$N = 22n$	How much logical Functions Yes, you can Ask from n variables?	OPK -1	5 minutes
45.	If the formulas A and $A \rightarrow B$ are provable in the propositional calculus, then the formula B also provable/	Formulate Rule ConclusionsStatements.	OPK -1	5 minutes
46.	If the formula A is provable in the propositional calculus, x is a variable, B is an arbitrary propositional formula, then the formula obtained by substituting the variable x in the formula A for the variable x wherever it is included by the formula B is also provable formula.	Formulate Rule substitutions of propositional calculus.	OPK -1	5 minutes

47.	If the formulas $A \rightarrow B$ and $B \rightarrow C$ are provable in the propositional calculus, then the formula $A \rightarrow C$ is also provable.	Formulate Rule syllogism propositional calculus.	OPK -1	5 minutes
48.	If the formula $A \rightarrow B$ is provable in calculation statements, The formula $\neg B \rightarrow \neg A$ is also provable.	Formulate the rule of counterposition of the propositional calculus.	OPK -1	5 minutes
49.	If the formula $A \rightarrow B$ or $A \rightarrow \text{Provable}$ in Calculation statements, the formula $A \rightarrow B$ is also provable.	Formulate Rule Withdrawals double negation of the propositional calculus.	OPK -1	5 minutes
50.	a b c	Establish the sequence of the formal theory: a) is determined by A lot of formulas, forming the language of the theory b) A subset of formulas called the axioms of the theory is distinguished c) the rules for deriving the theory are set.	OPK -1	2 minutes
51.	d	Which of the following algorithmic constructs is not a basic algorithmic construct: a) Following b) Branching c) Cycle Subprogram	OPK-5	5 minutes
52.	Material	Define Type Result Expressions $2.5 + 8/2 - 15$ (one word):	OPK-5	1 minute

53.	float	In the text of the program there is an operator: $y = 248 + 18/2 - 150$; Specify the type of result.	OPK-5	1 minute
54.	cout<<x;	Which C++ instruction is used to display the value of the variable x on the monitor screen? Write a line of code in accordance with the language syntax and using a standard output stream.	OPK-5	1 minute
55.	c	Sequence of statements: <pre>{ cout<< "n= "; cin>>n; }</pre> These are a) Simple Operator b) conditional statement c) composite operator composite condition	OPK-5	1 minute
56.	c	To combine a group of operators into a single block (compound operator) in C++, operator brackets are used: a) begin ... end; b) Indentation c) { } d) (* ... *) (...)	OPK-5	1 minute

57.	Cinematographer	A basic element of a programming language that is a complete phrase and defines some logical The completed stage of data processing is called	OPK-5	1 minute
58.	cin >>x	To enter the value of the variable x from the keyboard, the instruction #### is used. Write a line of code in compliance with the syntax of the language using a standard input stream.	OPK-5	1 minute
59.	a	Which of the following sections is required in a program written in C/C++? : a) intmain() section {...} b) const section c) Typedef section Section #include...	OPK-5	1 minute
60.	Material	Which of the simple standard types is not ordinal? Write a name type (one word).	OPK-5	1 minute
61.	a	What variables are called local variables? a) described inside the block b) described in the subprogram c) described in the main program described in the subroutine title	OPK-5	1 minute

62.	formal	What are the parameters defined in the subroutine title?	OPK-5	1 minute
63.	Programming	A section of computer science that studies methods and techniques Compilation programs for computers and, in addition, preparing a task to solve it on a computer is...	OPK-5	1 minute
64.	Program	A sequence of actions that a computer must perform in a strictly specified sequence to achieve of a specific result is ###	OPK-5	1 minute
65.	Programming language	A set of means and rules for representing an algorithm in a form acceptable to a computer is ### Insert in the singular (2 words)	OPK-5	1 minute
66.	Translator	A device or a set of programs that translates a program written in a symbolic language into a set of machine instructions, or transmits/converts data, or the other program is ###	OPK-5	1 minute

67.	interpreter	A translator that translates each construct of an algorithmic language into machine instructions and simultaneously executes this one constructs in a computer is called	OPK-5	1 minute
68.	Compiler	A translator that translates a program written in an algorithmic language into a set of machine instructions without its implementation in a computer is ###	OPK-5	1 minute
69.	debugger	A tool that allows the programmer to control the execution of a program at the level of individual operators for diagnostics mistakes, is ###	OPK-5	1 minute
70.	a	Sequence of statements: while (expression) operator; is an instruction for implementation a) loop with precondition b) loop with postcondition c) loop with the Instructions 'Choice'	OPK-5	1 minute

71.	b	Sequence of statements: <pre>do { operator; } while (expression);</pre> is an instruction for implementation a) loop with precondition b) loop with postcondition c) loop with the Instructions 'Choice'	OPK-5	1 minute
72.	c	Sequence of statements: <pre>for (initialization; conditional expression; modification) operator;</pre> - This is an instruction for implementation ### a) loop with precondition b) loop with postcondition c) loop with the d) Instructions 'Choice' 'Branching' Instructions	OPK-5	1 minute
73.	reading	Transferring data when working with files from an external device to RAM is called ### from the	OPK-5	1 minute
74.	Recording	When working with files, transferring data from RAM to an external device is called ### in a file	OPK-5	1 minute

75.	File	A named area of external memory, or a logical device, as a potential source or receiver of information, is ####	OPK-5	1 minute
76.	atoi	String -300 can be converted to a number using the type conversion function: Specify the name of the function.	OPK-5	1 minute
77.	d	Composite (combined), heterogeneous static structure data used to describe an ordered sequence of data include a) Files b) Arrays c) Strings d) Structures e) Sets Lists	OPK-5	1 minute
78.	a	Which of the descriptions of a character array of size 40 is correct according to the C++ syntax: a) char massiv[40]; b) string massiv[40]; c) var massiv: array[char] of char; d) massiv string[40]; massiv: array[1..40] of char;	OPK-5	1 minute
79.	a, c	Specify the arrays correctly described: a)chararray[20][20]; b)byte array[10]; const int m = 14; bool array[m]; d)real array[6]; -e)byte: array[false.. true];	OPK-5	5 minutes

80.	a	The main function is described: <pre>int main(){ int m, x[6] = {1,-5,8,-23,13,-2}; m = x[0]; for (int i=1; i<6; i++) if (x[i]<m) m = x[i]; cout<<"m = "<<m; _getch(); }</pre> What value does the program calculate? a) Minimum value in this array b) Maximum value in this array c) The minimum value among the elements of the array is from the first to the fifth d) The last element of the array that is less than the initial value of the variable m	OPK-5	5 minutes
81.	a	The main function is described: <pre>int main(){ int k=0, x[2][3] = {{1,-5,0}, {-23,13,7}}; for (int i=0; i<2; i++) { for (int j=0; j<3; j++) if (x[i][j] > 0) k++; } cout<<"k="<<k; _getch(); }</pre> What value does the program calculate? a) Number of positive elements in the array b) the number of positive elements in the last line of the array c) the number of positive elements in each row of the array	OPK-5	5 minutes
82.	c	The main function is described: <pre>int main(){ int k, x[2][3] = {{1,-5,0}, {-23,13,7}}; for (int i=0; i<2; i++) { k=0; for (int j=0; j<3; j++) if (x[i][j] > 0) k++; }</pre>	OPK-5	5 minutes

		<pre> } cout<<"k="<<k; } </pre> What value does it display on the screen? program? a) Number of positive elements in an array (b) the number of positive elements in each row array c) the number of positive elements in the last row array (d) Number of positive items in the last column array		
83.	a	Dancode: <pre> x = [1,-5,8,-23,13,-2] m = x[0] for i in range(1,6): if x[i]>m: m = x[i] print("m = ",m) </pre> What value does the program calculate? a) Maximum value in this array b) Minimum value in this array c) The maximum value among the elements of the array is from the first to the fifth d) The last element of the array, which is greater than the initial value of the variable m	OPK-5	5 minutes
84.	//-5//-23	The main function is described: <pre> int main(){ int m, x[6] = {1,-5,8,-23,13,-2}; m = x[0]; for (int i=1; i<6; i++) if (x[i]<m) { m = x[i]; cout<<"//"<<m; } } </pre> What message will be displayed as a result of the	OPK-5	5 minutes

		program?		
85.	//1//35	The main function is described: <pre>int main(){ int m, x[6] = {1,-5,8,-23,13,-2}; m = x[0]; for (int i=1; i<6; i++) if (x[i]<m) { m = x[i]; cout<<"//"<<i; } }</pre> What message will be displayed as a result of the program?	OPK-5	5 minutes
86.	6	The main function is described: <pre>intmain(){ int i, m, x[6] = {1,-5,8,-23,13,-2}; m = x[0]; for (i=1; i<6; i++) if (x[i]<m) m = x[i]; cout<<i; }</pre> What message will be displayed as a result of the program?	OPK-5	5 minutes
87.	2	The main function is described: <pre>intmain(){ int k, x[2][3] = {{1,-5,0}, {-23,13,7}}; for (int i=0; i<2; i++) { k=0; for (int j=0; j<3; j++) if (x[i][j] > 0) k++; } cout<<"k="<<k; _getch(); }</pre> What is the value of the variable k?	OPK-5	5 minutes

88.	k=2	The main function is described: <pre> int main() { int k, x[2][3] = {{1, -5, 0}, {-23, 13, 7}}; for (int i=0; i<2; i++) { k=0; for (int j=0; j<3; j++) if (x[i][j] > 0) k++; } cout<<"k="<<k; } </pre>	OPK-5	5 minutes
89.	k=2	The main function is described: <pre> int main() { int k, x[2][3] = {{1, -5, 0}, {-23, 13, 7}}; for (int i=0; i<2; i++) { k=0; for (int j=0; j<3; j++) if (x[i][j] > 0) k++; } cout<<"k="<<k; } </pre>	OPK-5	5 minutes

Description of the grading scale

Within the framework of the rating system, students' progress in each discipline is assessed during current control and intermediate certification.

Competency assessment criteria*

An "excellent" grade is given to a student if the student:

Knows: at a high level, fundamental sections of probability theory and mathematical statistics necessary in future professional activities.

Is able to: solve problems of a theoretical and applied nature at a high level from various sections of probability theory and mathematical statistics; build models of objects and concepts.

Possesses: at a high level the mathematical apparatus of probability theory and mathematical statistics for setting and solving problems.

A grade of "good" is given to a student if the student

He knows that the fundamental sections of probability theory and mathematical statistics necessary for future professional activities are at a sufficient level.

Is able to: solve problems of a theoretical and applied nature from various sections of probability theory and mathematical statistics at a sufficient level.

Possesses: at a sufficient level the mathematical apparatus of probability theory and mathematical statistics to formulate problem solving.

A grade of "satisfactory" is given to a student if the student:

Knows: at the intermediate level, the fundamental sections of probability theory and mathematical statistics are necessary in future professional activity.

Is able to: at an intermediate level, solve problems of a theoretical and applied nature from various sections of probability theory and mathematical statistics.

Possesses: at an intermediate level, the mathematical apparatus of probability theory and mathematical statistics for setting and solving problems.

A grade of "unsatisfactory" is given to a student if the student:

Knows: to a small extent, the fundamental sections of discrete mathematics and mathematical logic that are necessary in future professional activity.

Is able to: to a small extent solve problems of a theoretical and applied nature from various sections of discrete mathematics and mathematical logic; build models of objects and concepts.

Possesses: to a small extent the mathematical apparatus of discrete mathematics and mathematical logic; combinatorial and set-theoretic approaches to the formulation and solution of problems.