

THEORY OF PROBABILITY AND MATHEMATICAL STATISTICS

COURSE SYLLABUS ABSTRACT OF HIGHER EDUCATION INSTITUTION

Specialty 1-40 05 01 Information systems and technologies (by directions)

	Study mode	
	Full-time	Part-time
Year	2	2
Semester	3	4
Lectures, hours	34	6
Laboratory studies, hours	16	4
Practical (seminar) classes, hours	16	4
In-class test (semester, hours)		4 2 ч.
Exam, semester	3	4
Contact hours	66	16
Independent study, hours	54	104
Total course duration in hours / credit units	120/ 3	

1. Course outline.

Elements of combinatorics; event probability; conditional probability; sequence of independent tests; scalar random variables; numerical characteristics of scalar random variables; laws of distribution of some random variables; vector random variables; numerical characteristics of vector random variables; limit theorems of probability theory; sample and its characteristics; statistical estimates of distribution parameters; interval estimation; statistical verification of hypotheses; consent criteria; linear regression and correlation; basic concepts of the theory of random processes.

2. Course learning outcomes.

As a result of learning the academic discipline, the student must:

- **know**: basic concepts and methods of probability theory, mathematical statistics and the theory of random processes used in the study of special disciplines and in engineering practice;
- **be able to**: apply their knowledge to solving practical problems; use mathematical literature for independent study of applied issues;
- **possess**: mathematical apparatus and modeling and analysis skills for problems arising in engineering practice and solved by probabilistic methods.

3. Competencies.

UK-12 Possess the skills of creative analytical thinking.

BOD-5 Apply the tools of probability theory and mathematical statistics to form a probabilistic approach in engineering.

4. Requirements and forms of midcourse evaluation and summative assessment.

Intermediate attestation - computer testing, defense of laboratory work, current certification - exam. Computer testing is estimated from 0 to 30 points, defense of laboratory work - from 0 to 30 points. The minimum credit score for computer testing and for the defense of laboratory work is 18. The exam is assessed from 0 to 40 points. The minimum score for passing the exam is 15. The final grade is determined in accordance with the table.

Score	10	9	8	7	6	5	4	3	2	1	0
Points	100-94	93-87	86-80	79-72	71-65	64-58	57-51	50-41	40-17	16-1	0