THEORY OF PROBABILITY AND MATHEMATICAL STATISTICS

COURSE SYLLABUS ABSTRACT OF HIGHER EDUCATION INSTITUTION

Specialty 1-53 01 02 Automated information processing systems

	Study mode	
	Full-time	Part-time
Year	2	2
Semester	3	3
Lectures, hours	34	8
Practical (seminar) classes, hours	34	6
In-class test (semester, hours)		3 2 ч.
Exam, semester	3	3
Contact hours	68	16
Independent study, hours	52	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 provisions, formulas and theorems of probability theory for random events, one-dimensional and multidimensional random variables; basic methods of statistical processing and analysis of random experimental data;
– **be able to**: build mathematical models for typical random phenomena; use probabilistic methods in solving problems important for engineering applications; use probabilistic and statistical methods in calculating the reliability of radio engineering systems and networks;
– **possess**: modern software for statistical data processing; the skills of analyzing the initial and output data of the tasks being solved and the forms of their presentation; skills in using applied methods of probability theory and mathematical statistics.

3. Competencies.
UK-12 Possess the skills of creative analytical thinking.
BOD-4 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 - two computer tests, performance and defense of an individual task, current attestation - exam. The first of the computer tests is estimated from 0 to 30 points, the second - from 0 to 15 points, the individual task - from 0 to 15 points. The minimum credit score for the first test is 18, for the second test and for an individual task - a total of 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