THEORY OF PROBABILITY AND MATHEMATICAL STATISTICS

COURSE SYLLABUS ABSTRACT

6-05-0611-01 Information systems and technologies
(speciality code and name)
Information systems and technologies in design and production
(concentration)

6-05-0611-04 Electronic economy
(speciality code and name)
Electronic Marketing
(concentration)

6-05-0612-03 Information management systems
(speciality code and name)
Automated information processing systems
(concentration)

6-05-0611-01 Information systems and technologies

	STUDY MODE
	full-time
Year	2
Semester	3
Lectures, hours	16
Practical classes (seminars), hours	34
Exam, semester	3
Contact hours	50
Independent study, hours	58
Total course duration in hours / credit units	108/3

6-05-0611-04 Electronic economy

	STUDY MODE	
	full-time)	part-time
Year	2	3
Semester	3	5
Lectures, hours	16	4
Practical classes (seminars), hours	16	4
In-class test (semester, hours)		5 (2 hours)
Exam, semester	3	5
Contact hours	32	10
Independent study, hours	76	98
Total course duration in hours / credit units	108/3	

6-05-0612-03 Information management systems

	STUDY MODE	
	full-time)	part-time
Year	2	2
Semester	3	4
Lectures, hours	16	4
Practical classes (seminars), hours	34	6
In-class test (semester, hours)		4 (2 hours)
Exam, semester	3	4
Contact hours	50	12
Independent study, hours	58	96
Total course duration in hours / credit units	108/3	

1. Course outline

Random events. Probability of an event. Basic axioms and theorems. Formulas of total probability and Bayes. Theorems in the Bernoulli test scheme. Random variables. Law of probability distribution. Numerical characteristics of scalar random variables. Basic laws of distribution of random variables. Functions of one random argument. Two-dimensional random variables. Numerical characteristics of two-dimensional random variables. Multivariate random variables. Limit theorems. Basic concepts of mathematical statistics. Estimation of the distribution law. Point and interval estimates.

2. Course learning outcomes

Upon completion of the course, students will be expected to

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 systems and networks;

to possess a skill: use of modern software tools for statistical data processing; analysis of the source and output data of the tasks being solved and the forms of their presentation; use of applied methods of probability theory and mathematical statistics.

3. Competencies

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

4. Requirements and forms of midcourse evaluation and summative assessment

Intermediate attestation - two computer tests, exam. Each of the computer tests is estimated from 0 to 30 points. The minimum credit score for each test is 18. The exam is scored from 0 to 40 points. The minimum score for passing the exam is 15. The final grade is determined in accordance with the table.