

MATHEMATICAL ANALYSIS

COURSE SYLLABUS ABSTRACT OF HIGHER EDUCATION INSTITUTION

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

	Study mode		
	Full-time	Part-time	Part-time (shortened program)
Year	1	1	1
Semester	1, 2	1,2	1
Lectures, hours	84	18	10
Practical (seminar) classes, hours	84	16	10
In-class test (semester, hours)		1,2 (4 h.)	1 (2 h.)
Test, semester	1	1	
Exam, semester	2	2	1
Contact hours	168	38	22
Independent study, hours	156	286	302
Total course duration in hours / credit units	324/ 9		

1. Course outline.

Introduction to mathematical analysis. Complex numbers. Polynomials. Differential calculus of functions of one variable. Differential calculus of functions of several variables. Integral calculus of functions of one variable. Integral calculus of functions of several variables. Differential equations and systems. Numerical and functional series.

2. Course learning outcomes.

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

- **know**: basic provisions of mathematical analysis of functions of one and several variables; complex numbers, elements of the theory of functions of a complex variable; fundamentals of the theory of series and ordinary differential equations;
- **be able to**: differentiate and integrate functions; solve the simplest differential equations integrable in quadratures; expand functions into power series; apply the operations of differential and integral calculus to solve specific problems;
- **possess**: methods of analytical and numerical solution of algebraic and ordinary differential equations; creative analytical thinking skills..

3. Competencies.

UK-12 Possess the skills of creative analytical thinking.

BOD-1 Apply the methods of differential and integral calculus, the apparatus of the theory of power and functional series in the construction and study of mathematical models of applied problems.

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

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

Score	Passed	Not passed
Points	51-100	0-50

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