MATHEMATICS

COURSE SYLLABUS ABSTRACT

Speciality: 6-05-0715-07 Operation of ground transport and technological machines and complexes
Concentration: Vehicle Maintenance

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	1, 2	1, 2	1
Semester	1, 2, 3	1, 2, 3	1, 2
Lectures, hours	118	26	18
Practical classes, hours	82	18	14
In-class test (semester, hours)	—	1 (2 hours), 2 (2 hours)	1 (2 hours),
Exam, semester	1, 2	1, 2	1
Pass/fail, semester	3	3	2
Contact hours	200	48	34
Independent study, hours	268	420	434
Total course duration in hours / credit units	468 / 13		

1. Course outline: linear algebra and analytical geometry, vector algebra, introduction to mathematical analysis, differential and integral calculus of functions of one and many variables, differential equations, numerical and functional (power) series, functions of a complex variable, probability theory and elements mathematical statistics.

2. Course learning outcomes. Upon completion of the course, students will be expected to
know:
– methods of mathematical analysis, analytical geometry, linear algebra, solving differential equations;
– fundamentals of the theory of functions of a complex variable, operational calculus, field theory;
– basic concepts and methods of probability theory and mathematical statistics;
– basic mathematical methods for solving engineering problems;
be able to:
– solve mathematically formalized problems of linear algebra and analytical geometry;
– differentiate and integrate functions, calculate integrals over a figure, solve differential equations and systems of differential equations;
– pose and solve probabilistic problems and perform statistical processing of experimental data;
– build mathematical models of physical processes.
to possess a skill:
– creative analytical thinking;
– independently generate and implement new ideas and methods.

3. Competencies. BPK-1: Apply knowledge of natural science educational disciplines for experimental and theoretical study, analysis and solution of applied engineering problems.

4. Requirements and forms of midcourse evaluation and summative assessment. Current certification: ZIZ – protection of an individual assignment; PKU – intermediate progress control. Intermediate certification: exam. Assessment of the student's level of knowledge and the development of competencies in all forms of control is carried out on a ten-point scale.