

NUMERICAL METHODS FOR SOLVING PROBLEMS

(name of the discipline)

ANNOTATION TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION

Specialty 7-07-0732-01 «Construction of buildings and structures»

Profiling: Industrial and civil construction

	Form of higher education	
	Full-time (daytime)	Correspondence
Course	1	2
Semester	2	2
Lectures, hours	16	4
Laboratory classes, hours	34	6
Test (report), semester	2	3
Classroom hours per academic discipline	50	10
Independent work, hours	58	98
Total hours per academic discipline /credit units	108/3	

Profiling: Car roads

	Form of higher education	
	Full-time (daytime)	
Course	1	
Semester	2	
Lectures, hours	16	
Laboratory classes, hours	34	
Test (report), semester	2	
Classroom hours per academic discipline	50	
Independent work, hours	58	
Total hours per academic discipline /credit units	108/3	

1. Brief content of the discipline: numerical solution of systems of linear algebraic equations, systems of nonlinear equations, equations of the form $f(x) = 0$, least squares approximation of functions, approximate calculation of integrals, solution of ordinary differential equations.

2. As a result of mastering the academic discipline, the student must:

know – the strategy for applying numerical methods, numerical methods for solving basic mathematical problems (integration, differentiation, systems of equations), the structure and capabilities of software of modern decision support systems and automation of engineering calculations;

be able to – choose the best numerical methods for solving the assigned problems, determine the mathematical characteristics of the original information and evaluate the accuracy of the resulting numerical solution, solve applied problems is one of modern decision support systems and automation of engineering calculations;

have a skill: apply numerical methods of problem solving, use software tools of modern decision support systems and automation of engineering calculations.

3. Competencies.

Apply software tools to solve engineering problems.

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

Current assessment: PLW - protection of laboratory work; ICP - intermediate control of progress. Intermediate assessment: test.