

PHYSICS

ANNOTATION

TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION

Specialty 1-70 03 01 "Roads"

	Form of higher education		
	Full-time (daytime)	Part-time	Part-t reduc
Course	1,2	2	1
Semester	2,3	3, 4	1
Lectures, hours	68	16	8
Practical (seminar) classes, hours	32	8	6
Laboratory classes, hours	68	12	6
Classroom examination (semester, hours)	-	3 (2 hours) 4 (2 hours)	1 (2 hours)
Exam, semester	2, 3	3, 4	1
Classroom hours per academic discipline	168	40	22
Independent work, hours	72	200	218
Total hours per academic discipline / credit units	240/6		

1. Brief content of the discipline: 1. Mechanics 2. Molecular physics and thermodynamics. 3. Electrodynamics. 4. Harmonic vibrations, mechanical waves. 5. Optics. 6. Quantum and nuclear physics.

2. As a result of studying the discipline, the student must: **know:**

- the basic laws and theories of classical and modern physical science, as well as the limits of their applicability;
- methods for measuring the physical characteristics of substances and fields;
- physical foundations of methods for studying substances;
- principles of experimental and theoretical study of physical phenomena;

be able to:

- apply the laws of physics to solve applied engineering problems;
- use measuring instruments in the experimental study of physical and technological processes;
- process and analyze the results of experimental measurements of physical quantities;

own:

- methods of physical modeling of technical processes;
- methods of analysis and solution of applied engineering problems.

3. Formed competencies

BPC-1. Apply knowledge of natural science academic disciplines for experimental and theoretical study, analysis and solution of applied engineering problems.

4. The current attestation of students is carried out to determine the compliance of the results of their educational activities with the requirements of educational standards, curriculum documentation of educational programs of higher education. The form of the current attestation of students is an exam. Current certification is carried out in oral or oral-written form. The form of intermediate certification is a test, which is carried out in writing.