

PHYSICS
(course title)

COURSE SYLLABUS ABSTRACT

Speciality 6-05-0714-02 Mechanical engineering technology, metal-cutting machines and tools
(speciality code and name)

Concentration Mechanical Engineering Technology
(concentration)

	STUDY MODE		
	full-time	part-time	part-time (shortened program)
Year	1, 2	2	1
Semester	2, 3	3, 4	1
Lectures, hours	68	16	8
Practical classes (seminars), hours	32	8	4
Laboratory classes, hours	50	10	4
In-class test (semester, hours)		4 sem. – (2 hours)	
Exam, semester	2, 3	3,4	1
Contact hours	150	36	16
Independent study, hours	186	300	320
Total course duration in hours / credit units	336/9		

1. Course outline: 1. Mechanics 2. Molecular physics and thermodynamics. 3. Electrodynamics. 4. Harmonic vibrations, mechanical waves. 5. Optics. 6. Quantum and nuclear physics.

2. Course learning outcomes

Upon completion of the course, students will be expected to know:

- 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 matter;

- principles of experimental and theoretical study of physical phenomena and processes.

be able to:

- apply the laws of physics to solve applied engineering problems;

- use basic measuring instruments in the experimental study of physical and technological processes;

- process and analyze the results of experimental measurements of physical quantities.

to possess a skill:

- using methods of physical modeling of technical processes;

- using methods of analysis and solving applied engineering problems.

3. Competencies

UC-2. Solve standard problems of professional activity based on the use of information and communication technologies

BPC-1. Apply knowledge of the fundamentals of higher mathematics, physics, chemistry, computer science in engineering activities for design and technological support of mechanical assembly production

BPC-1.2. Know the basic concepts and laws of physics, the principles of theoretical and experimental analysis of physical phenomena and processes that take place during the processing and hardening of metals

4. Requirements and forms of midcourse evaluation and summative assessment

Current certification 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 forms of intermediate certification of students are exams. Interim certification is carried out in oral or oral-written form. The form of certification is a test, which is carried out in writing.