

**Academic discipline:
"Quantum physics"**

Code and name of specialty	1- 02 05 0 Physics and computer science
Training course	3
Semester of training	6
Number of class hours	78
Lectures	20
Seminar classes	-
Practical classes	32
Laboratory classes	26
Form of current assessment (credit/differential credit/exam)	Exam
Number of credits	3
Competencies to be formed	To apply the basic principles of optics and quantum physics to solve problems of interdisciplinary and practice-oriented content
<p>Summary of the content of the academic discipline:</p> <p>The subject of quantum physics. A brief historical sketch of the development of quantum physics. Blackbody radiation. Quantum properties of radiation. Photoelectric effect. The laws of the photoelectric effect. The Einstein equation. Fundamentals of quantum mechanics. The wave function and its physical meaning. The Schrodinger equation. Models of the atom. Rutherford's experience. The planetary model of the atom. Bohr's postulates. Quantization of energy, angular momentum, and the projection of the angular momentum of an electron in an atom. Spontaneous and forced radiation. Quantum generators. The development of quantum electronics in Belarus. Quantum phenomena in solids. Energy zones in crystals. Metals, semiconductors, dielectrics. Physics of the atomic nucleus. Nuclear forces. Models of the atomic nucleus. Radioactivity. Elementary particles. Particles and antiparticles. Experimental methods of nuclear physics.</p>	