Academic discipline:
"Geometric, wave and mathematical physics"

Code and name of specialty	1- 02 05 0 Physics and computer science
Training course	3
Semester of training	5
Number of class hours	120
Lectures	38
Seminar classes	-
Practical classes	36
Laboratory classes	46
Form of current assessment (credit/differential credit/exam)	Credit/ exam
Number of credits	6
Competencies to be formed	To apply the basic principles of optics and quantum physics to solve problems of interdisciplinary and practice-oriented content

Summary of the content of the academic discipline:

The history of optics development. Fundamentals of the electromagnetic theory of light. Photometry. Classical experiments on the observation of interference in optics. Newton's rings. Multipath interference. Light diffraction. The Huygens-Fresnel principle. Spectral devices. The basic concepts and laws of geometric optics. Fresnel formulas. Optical devices and their types. The addition of thin lenses into an optical system. The telescope. Magnifier. A microscope. Photo camera. The human eye as an optical system. Eye problems. Polarization of light and its types. Malus' law. Relativistic effects in optics. The speed of light. Classical experiments on measuring the speed of light.