Discipline Description

1	Discipline	Physical basis of radiation detection and diagnostics of materials
2	Year of Study, Speciality	4; 1-31 04 08 Computer physics
3	Term of Study	8
4	Number of Credits	4
5	Tutors	Associate professor Yu.M. Pokotilo Senior lecturer A.V. Giro
6	Study Objectives	Giving knowledge about the physics of interaction of optical photons, high-energy radiation and particles with a solids, introducing in physical principles and means of studying the structure, composition and properties of solids, as well as instrument structures based on them.
7	Prerequisites	Basic knowledge of General Physics
8	Course Content	Kinetic effects in solids. Resistivity measuring methods. Measuring the concentration and mobility of charge carriers and determining the recombination parameters of solids. Optical methods of diagnostics. Particles and X-rays based methods of diagnostics. Interaction of optical photons with a solid. Principle of operation and parameters of photodetectors. Interactions of high-energy radiation and particles with a solid. Detectors of radiation and particles.
9	Literature Recommended	1. Woodruff, D. Ph. Modern techniques of surface science / D. Ph. Woodruff. – Cambridge : Cambridge University Press, 2016. – 508 p. 2. Optical and infrared detectors / R.J. Keyes [at al.]; ed. by R.J. Keyes. – 2nd ed. – Berlin, Heidelberg, New-York : Springer-Verlag, 1980. – 319 p.
10	Methods of Teaching	Interactive lectures
11	Language of Teaching	English
12	Requirements, Current Assessment	Tests, library-research paper
13	Form of Current Assessment	Examination