Supplement 17.4

Ead of EP department PTI
_____(Krivobokov V.P.)
« ____» _____ 2015__ г.
.

Annotation

1. Module (discipline) Physics 3, cluster 1

2. Code in the curriculum Б2.Б

3. Programs

13.03.01 – Heat and Power Engineering and Heat Engineering
13.03.02 – Electric Power Engineering and Electrical Engineering
13.03.03 – Power Machinery Engineering
14.03.02 – Nuclear Physics and Technologies
22.03.01 – Materials Science and Technology
27.03.01 – Standartization and Metrology
27.03.02 – Quality Management
27.03.05 - Innovation Management

4. Profile Training (specialization program) all

5. Qualifications (degree) Bachelor

6. Providing unit Dept. EP department PTI

7. Teacher _____ phone_____ *E-mail*_____

9. Results of the study module (discipline):

No	
	Should know
РД1	The main physical phenomena and the basic laws of physics; limits of their applicability, the application of laws in the most important practical applications
РД2	Basic physical quantities and physical constants, their definition, meaning, methods and their units
РД3	The fundamental physical experiments and their role in the development of science
РД4	Purpose and principles of major physical instruments
	Should know how
РД5	Explain the main observable natural and anthropogenic phenomena and effects from the standpoint of the fundamental physical interactions to interpret the meaning of physical quantities and concepts
РД6	Write the equation for the physical values, record of the equation and find its solution

РД7	Work with modern instruments and equipment Physical Laboratory
РД8	Use a variety of methods of physical measurement and processing of experimental data, including the use of computer technology and information technology in solving problems
РД9	Use adequate methods of physical and mathematical modeling, as well as to apply the methods of physical and mathematical analysis to solve specific problems of the natural sciences and engineering
	Should have experience (skills)
РД10	Use the basic common physical laws and principles in important practical applications
РД11	Applications of the basic methods of physical and mathematical analysis to solve the problems of the natural sciences
РД12	The proper operation of the main devices and equipment of modern physics laboratory
РД13	Processing and interpretation of experimental results, including the use of computer technology and information technology
РД14	The use of physical modeling in engineering practice

10. The content of the module (Discipline) (the list of the main topics (sections)

Wave optics, interference, diffraction, dispersion, polarization of light. Quantum the nature of the radiation. Quantum mechanics of atoms and ions. The photoelectric effect, the Compton effect. Eelements of quantum Solid State Physics. Neutrons, protons, nuclei. The structure of the atomic nucleus. Nuclear reactions. Elementary particles. Fundamental interactions.

11. Course 2 term 3 Amount of credits 4

12. Prerequisites: Б2. Б1 «Mathematics», Б2. Б1.1 «Linear algebra», Б2. Б1.2 «Mathematical analysis 1», Б2. Б1.3 «Mathematical analysis 2» Physics 1.

13. Corequisites: Б2. Б1.2 «Mathematical analysis 1», Б2. Б1.3 «Mathematical analysis 2» Б3.Б3 "Electrical engineering, electronics and circuitry,"

14. Type certification (exam, test) exam

Author Kravchenko N.S.