

Theory of physical fields

ANNOTATION

TO THE CURRICULUM OF THE INSTITUTION OF HIGHER EDUCATION

Specialty: 1-54 01 02 "Methods and devices for quality control and diagnostics of the state of objects"

	Form of higher education
	full-time
Well	(daily)
	2
Semester	4
Lectures, hours	68
Practical (seminar) classes, hours	34
Exam, semester	4
Classroom hours per academic discipline	102
Independent work, hours	114
Total hours per academic discipline/credit units	216/6

1. Brief content of the academic discipline.

The core of the course "Theory of Physical Fields" is the study of the features of the interaction of physical fields with matter and their mathematical description. The course allows students to lay down basic knowledge in the field of analysis of physical fields, based on the existing achievements of acoustics, optics, thermal physics, electronics, radiophysics.

2. Learning outcomes.

As a result of mastering the academic discipline, the student must

Know: Basic laws and correlations of the theory of physical fields; mathematical apparatus used to describe and calculate the parameters of physical fields; the main physical effects that take place during the interaction of physical fields with matter.

Be able to: Apply the basic correlations of the theory of physical fields in solving various applied problems; calculate the parameters of fields of various physical nature using existing theoretical methods; use the acquired knowledge in the design of non-destructive testing procedures.

Be proficient in: Mathematical tools used to describe and calculate the parameters of physical fields; the main methods for calculating the parameters of physical fields of measuring

converters; ways of processing the results of non-destructive testing procedures.

3. Competences being formed: BPK-14 "to be able to develop mathematical models of measuring transducers of non-destructive testing devices"

4. Requirements and forms of the current certification: exam (oral and written form). To be admitted to the exam, the student must successfully complete two tests, one for each module of the academic semester.