

# **TECHNICAL ELECTRODYNAMICS**

(course title)

## **COURSE SYLLABUS ABSTRACT**

specialties 7-06-0716-03 «Instrumentation»

profile Testing and control in electromechanical systems

	STUDY MODE	
	full-time	part-time
Year	1	1
Semester	1	2
Lectures, hours	16	4
Practical lessons (seminars), hours	16	4
Laboratory works, hours	-	-
Graded exam, semester	1	2
Contact hours (incl. guided independent study)	32	8
Independent study, hours	76	100
Total course duration in hours / credit units	108/3	

### 1. Course outline

The purpose of the academic discipline is to develop the basic knowledge and skills of a specialist in the field of technical electrodynamics. The objectives of the academic discipline are: studying methods for solving problems of technical electrodynamics; study of electromagnetic fields; familiarization with the physics of processes and the principles of constructing basic devices; development of skills in applying theoretical physics methods to solving scientific and technical problems in the field of technical electrodynamics.

### 2. Course learning outcomes

As a result of the mastering of the subject, the student has to know the main types of devices and principles of their operation, methods for solving problems of technical electrodynamics; to apply: apply modern methods of designing electrical power systems and networks, electrical parts of electrical machines and power supply systems; apply solutions to the equations of electromagnetic fields to calculate the surface effect in current-carrying conductors, to calculate electrodynamic forces and electrical energy losses in a system of conductors adjacent to conductive and ferromagnetic media; to master have the skill of physical modeling of technical processes, analysis and solution of applied engineering problems. технических процессов, анализа и решения прикладных инженерных задач.

### 3. Competency Code:

Уметь рассчитывать характеристики электрических цепей и электромагнитных полей

### 4. Requirements and forms of midcourse evaluation and summative assessment

The overall assessment of the knowledge, skills and abilities of students is to analyze their work when they perform various types of classes. So, with a short survey of students before the start of the lecture, based on the results of the previous lecture, their knowledge in understanding the previously presented material is assessed. When students carry out measurements during laboratory work, it is assessed how deeply they have mastered the skills of working with measuring instruments, and when they perform calculation tasks when called to the board or independent work, their physical and mathematical culture is assessed. Intermediate attestation (exam) is carried out in two stages. The first stage includes a written answer to the questions, which are a random sample of the questions submitted for the exam and one task. The second stage consists in a brief conversation with the student on the fundamental issues of the course.

