

Electrodynamics - course description

General information	
Course name	Electrodynamics
Course ID	13.2-WF-FizP-E-S17
Faculty	Faculty of Physics and Astronomy
Field of study	Physics
Education profile	academic
Level of studies	First-cycle studies leading to Bachelor's degree
Beginning semester	winter term 2018/2019

Course information	
Semester	6
ECTS credits to win	6
Course type	obligatory
Teaching language	english
Author of syllabus	

Classes forms					
The class form	Hours per semester (full-time)	Hours per week (full-time)	Hours per semester (part-time)	Hours per week (part-time)	Form of assignment
Lecture	30	2	-	-	Exam
Class	30	2	-	-	Credit with grade

Aim of the course

To acquaint students with the basic topics of classical physics, constituting the basis for contemporary physics, including the properties of matter, the theory of electromagnetic radiation and their mutual relations.

Prerequisites

Fundamentals of physics and basis of higher mathematics

Scope

Lecture:

Elements of the tensor calculus.

Maxwell's equations as a result of the generalization of experimental facts.

Stationary fields.

Variable electromagnetic fields.

Scalar theory of light.

Relativistic kinematics and electrodynamics.

Motion of the charge in the electromagnetic field.

Energy and momentum in electrodynamics and relativistic mechanics.

Classes:

Solving accounting problems from the subject of the lecture.

Teaching methods

Conventional lectures, calculate class.

Learning outcomes and methods of theirs verification

Outcome description	Outcome symbols	Methods of verification	The class form
The student understands and predicts the mechanisms occurring in physical phenomena		<ul style="list-style-type: none">a quizan exam - oral, descriptive, test and other	<ul style="list-style-type: none">LectureClass
The student uses deductive methods to present the theoretical interpretation of previously known experimental facts.		<ul style="list-style-type: none">a quizan exam - oral, descriptive, test and other	<ul style="list-style-type: none">LectureClass

Assignment conditions

Lecture: Written and oral exam. Passing condition - a positive exam grade.

Classes Active presence on exercises, passing tests.

Before the exam the student must get a pass from the exercises.

Final grade

: weighted average of exam grades (60%) and classes (40%).

Recommended reading

[1] L. D. Landau, E. M. Lifszic, Teoria pola, PWN, Warszawa 2009.

[2] J. D. Jackson, Elektrodynamika klasyczna, PWN, Warszawa 1982.

[3] M. Sufczyński, Elektrodynamika, PWN, Warszawa 1978.

[4] R. S. Ingarden, A. Jamiołkowski, Elektrodynamika klasyczna, PWN, Warszawa 1980.

Further reading

[1] D. J. Griffiths, Podstawy elektrodynamiki, PWN, Warszawa 2006.

Notes

Modified by dr hab. Piotr Lubiński, prof. UZ (last modification: 01-08-2018 15:26)

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