SUBJECT CARD

Name of subject in Polish **Fizyka 2B**
Name of subject in English **Physics 2B**
Profile: **academic**
Level and form of studies: **1st level, full-time**
Kind of subject: **obligatory**
Group of courses **NO**

	Lecture	Classes	Laboratory	Project	Seminar
Number of hours of organized classes in University (ZZU)	30				
Number of hours of total student workload (CNPS)	50				
Form of crediting	Examination	Examination / crediting with grade*	Examination / crediting with grade*	Examination / crediting with grade*	Examination / crediting with grade*
For group of courses mark (X) final course					
Number of ECTS points	2				
including number of ECTS points for practical classes (P)					
including number of ECTS points corresponding to classes that require direct participation of lecturers and other academics (BU)	1.5				

*delete as not necessary

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Knowledge and skills in the field of Physics 1A or Physics 1B

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SUBJECT OBJECTIVES

C1 Acquisition of knowledge, taking into account its application aspects, in: electricity, magnetism, basics of optics, elements of the special theory of relativity, basics of quantum physics, basics of atomic physics

SUBJECT EDUCATIONAL EFFECTS

relating to knowledge:

PEU_W01 has general knowledge of the basic concepts and principles of: electricity; magnetism; the basics of optics; elements of the special theory of relativity; the basics of quantum physics; the basics of atomic physics

relating to skills:

PEU_U01 is able to carry out a quantitative analysis related to a physical problem and formulate qualitative conclusions

relating to social competences:

PEU_K01 understands the need for learning (both independently and in a group)

PROGRAMME CONTENT

Lecture		Number of hours
Lec 1	Organizational issues. Electrostatics	2
Lec 2	Electrostatics	2
Lec 3	Electric current	2
Lec 4	Magnetostatics	2
Lec 5	Electromagnetic induction	2
Lec 6	Geometric optics	2
Lec 7	Wave optics	2
Lec 8	Elements of the special theory of relativity	2
Lec 9	Wave-particle duality of light and matter, Planck's distribution, external photoelectric effect	2
Lec 10	Fundamentals of quantum physics	2
Lec 11	Fundamentals of atomic physics	2
Lec 12	Lectures extending the current knowledge of physics1[1]	8
	Total hours	30

TEACHING TOOLS USED

N1. Traditional lecture with the use of multimedia presentations and physical laws/phenomena demonstrations
N2. Own work - self-preparation for the colloquium and exam
N3. Consultations

EVALUATION OF SUBJECT LEARNING OUTCOMES ACHIEVEMENT

Evaluation (F – forming during semester), P – concluding (at semester end)	Learning outcomes code	Way of evaluating learning outcomes achievement
P	PEU_W01, PEU_U01, PEU_K01	Exam

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] D. Halliday, R. Resnick, J. Walker, Podstawy fizyki, tomy 3, 4 i 5, Wydawnictwo Naukowe PWN.
[2] J. Orear, Fizyka t.1 i 2, WNT, 1993, Warszawa 2003.

SECONDARY LITERATURE:

[1] J. Massalski, M. Massalska, *Fizyka dla inżynierów*, cz. 1. i 2., WNT, Warszawa 2008.
[2] Fizyka dla szkół wyższych, *https://openstax.org/books/fizyka-dla-szk%C3%B3%C5%82-wy%C5%BCszych-tom-2/pages/przedmowa*.

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

[1] Lectures with the content agreed with the Faculty for which the lecture is given.

pracownik WPPT