

1.	Field of study	Environmental Protection
2.	Faculty	Faculty of Natural Sciences
3.	Academic year of entry	2019/2020 (winter term)
4.	Level of qualifications/degree	first-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time

Module:

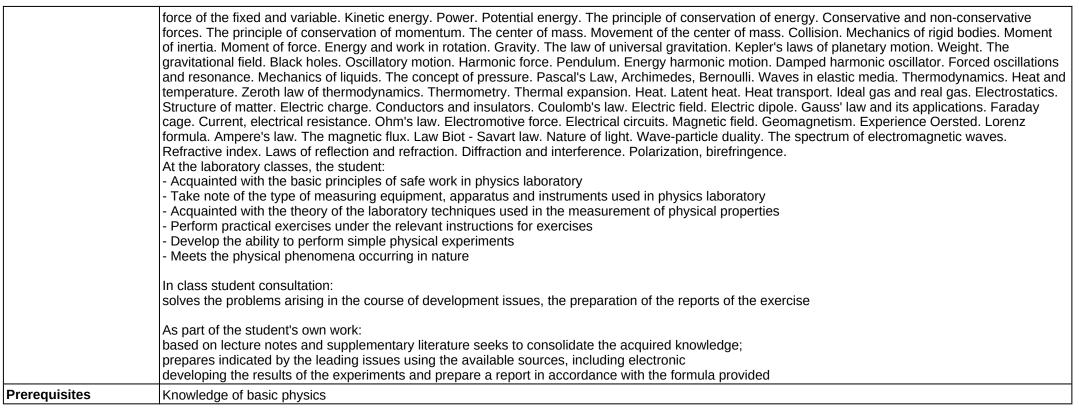
Physics

Module code: 10S\_04

## 1. Number of the ECTS credits: 5

2. Learning o	Itcomes of the module		
code	description	learning outcomes of the programme	level of competence (scale 1-5)
1OS_04_1	Zna podstawowe prawa przyrody	10S_U02_P	4
		10S_W01_P	4
1OS_04_2	knows the basic phenomena occurring in the nature	10S_U02_P	4
		10S_W01_P	4
1OS_04_3	wykazuje znajomość modeli matematycznych na poziomie pozwalającym opisywanie zjawisk przyrodniczych;	10S_U02_P	3
			3
1OS_04_4	is able to apply basic research techniques and apparatus to study the magnetic properties of environmental samples	10S_U02_P	4
		10S_W01_P	4
1OS_04_5	uses a computer to the extent necessary to search for information and analysis,	10S_W01_P	4
1OS_04_6	understands the need for self-learning and the need to improve the knowledge and skills	10S_K01_P	5
		10S_U04_P	5
1OS_04_7	Zna podstawową, z zakresu wykładu, terminologię naukową w języku angielskim	105_W08_P	4

3. Module description	
	During lectures student meets the following issues: Standards and units. The measurement of physical quantities. Vectors. Kinematics. The reference system. The phenomenon of movement. One- dimensional movement and the movement in the plane. The concept of displacement, velocity and acceleration. Projections. Curved path motion. Relative movement. Dynamics of material point. Mass, momentum and strength. Newton 's laws. Application of Newton's principles. Work done by the



4. Assessment of the learning outcomes of the module						
code type		description	learning outcomes of the module			
10S_04_w_1		the implementation of a given exercise	1OS_04_1, 1OS_04_2, 1OS_04_3, 1OS_04_4, 1OS_04_5, 1OS_04_6, 1OS_04_7			
1OS_04_w_2		proper exercise and compliance with the principles of work safety. Evaluation of the	1OS_04_1, 1OS_04_2, 1OS_04_3, 1OS_04_4, 1OS_04_5, 1OS_04_6, 1OS_04_7			
1OS_04_w_3		supplementary. The condition of the test is a pass laboratory classes.	1OS_04_1, 1OS_04_2, 1OS_04_3, 1OS_04_4, 1OS_04_6, 1OS_04_7			



5. Forms of teaching							
	form of teaching			required hours of student's own work		assessment of the	
code	type	description (including teaching methods)	number of hours	description	number of hours	learning outcomes of the module	
10S_04_fs_1	lecture	Lectures in the field of university physics course using audio-visual aids and demonstrations to illustrate the issues discussed in the lecture	45	Analysis of the lecture notes; work with the literature		1OS_04_w_2, 1OS_04_w_3	
1OS_04_fs_2	laboratory classes	Exercises in the physics laboratory: using different devices and measuring equipment, students perform exercises according to the instructions and get to know the physical phenomena occurring in nature. Perform exercises in the field of mechanics, molecular physics and heat, electricity and optics.	15	Preparing for the exercises based on the issues listed in the instructions for exercises and given the literature.		1OS_04_w_1, 1OS_04_w_2, 1OS_04_w_3	