



Course title: **PHYSICS**

ECTS credit allocation (and other scores): **6**

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Natural sciences

Language: English /Polish

Number of hours per semester: 30 lectures + 45 classes = 75 hours

Course coordinator/ Department and e-mail: Erasmus coordinator Anna Szczepkowska/ WMiI,  
erasmuswmii.uwm.edu.pl

Type of classes: classes and lectures

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Substantive content

CLASSES:

Students learn the elements of metrology and the methodology of work in physical laboratory. The work consists in carrying out 12 experiments (the basics of the theory concerning the subject should be prepared in advance phenomena) and processing the obtained results.

LECTURES:

Fundamentals of the theory of measurement uncertainties. Classical mechanics of the mass point and of the systems of mass points. Physical description of the motion, the energy, the momentum and the angular momentum conservation laws. The motion in a central force field, conservative forces, gravitational interactions. The electromagnetic phenomena, the geometric and wave optics. Fundamental concepts of quantum mechanics.

LEARNING PURPOSE

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Getting to know the basic methods of the physical description of the world, developing the skills of qualitative and quantitative analysis physical phenomena, teaching the correct formulation of physical laws and their interpretation, teaching independent execution of exercises and preparation of measurement results.

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On completion of the study programme the graduate will gain:

Knowledge:

the student Has knowledge of physics necessary to understand the basic physical phenomena occurring in electronic and ICT components and systems

Skills:

The student can obtain information from literature, databases and other sources; is able to integrate the obtained information, interpret them, as well as draw conclusions and formulate and justify opinions



Social Competencies:

The student understands the need and knows the possibilities of continuous education (second and third cycle studies, postgraduate studies)

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**BASIC LITERATURE**

1) D. Halliday, R. Resnick, J. Walker, Podstawy fizyki, Tom 1,2,3,4,5, Wyd. PWN, R. 2006; 2) A. Wróblewski, J. Zakrzewski, Wstęp do fizyki, Tom 1,2, Wyd. PWN, R. 1984; 3) C. Bobrowski, Fizyka-krótki kurs, Wyd. PWN, R. 2004; 4) S.J. Ling, J. Sanny i inni, Fizyka dla szkół wyższych, Tom 1,2,3, Wyd. OpenStax Polska, R. 2016

**SUPPLEMENTARY LITERATURE**

1) R.P. Feynman, R.B. Leighton, M. Sands, Feynmana wykłady z fizyki, Tom 1,2,3,4,5, Wyd. PWN, R. 1974;

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The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 3,2 ECTS points

Student's independent work: 2,8 ECTS points