



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Technical physics

Course

Field of study

Management and Production Engineering

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

1/2

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

Number of hours

Lecture

15

Tutorials

Laboratory classes

15

Projects/seminars

Other (e.g. online)

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

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Faculty of Materials Science and Technical

Physics

Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

Basic knowledge concerning physics and mathematics (program base for secondary school, basic level). Solving elementary physical problems based on acquired knowledge, ability to acquire



information from given sources. Understanding of necessity of own competence broadening, readiness to cooperate within group.

Course objective

Providing students with basic knowledge of physics, to the extent specified by the curriculum content appropriate to the field of study.

Course-related learning outcomes

Knowledge

The student is able to define the basic physical concepts in the scope covered by the content programs and give simple examples of their use in the surrounding world - [K_W03]

Skills

The student is able to perform the analysis of the basics physical phenomena - [K_U04]

The student knows how to apply basic physical laws and basic models during problem solutions to the extent covered by the contents relevant to the field of study - [K_U04]

The student is able to use the indicated sources of knowledge with their understanding (list of primary literature) and acquire knowledge from other sources - [K_U04]

Social competences

The student is able to develop the knowledge in the presented subject - [K_K01]

The student is aware of the meaning of the physics in the engineer development - [K_K01]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: written exam (14 short questions)

Laboratory: protocol from the exercise; checking the ability to perform the exercise

Programme content

Kinematics, dynamics, acoustics, gravity, electromagnetism

Teaching methods

Lecture: multimedial presentation, animations, movies, discussion.

Laboratory: laboratory exercises in the field of mechanics, electricity and optics

Bibliography

Basic

Fizyka dla szkół wyższych, tom 1-3, OpenStax.org

<https://openstax.org/details/books/fizyka-dla-szk%C3%B3%C5%82-wy%C5%BCszych-tom-1>



<https://openstax.org/details/books/fizyka-dla-szk%C3%B3%C5%82-wy%C5%BCszych-tom-2>

<https://openstax.org/details/books/fizyka-dla-szk%C3%B3%C5%82-wy%C5%BCszych-tom-3>

S.Szuba, Ćwiczenia laboratoryjne z fi zyki, Wydawnictwo Politechniki Poznańskiej, Poznań 2007

Additional

D. Halliday, R. Resnick, J. Walker, Podstawy fizyki, tom 1-5, PWN Warszawa 2012.

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3
Classes requiring direct contact with the teacher	40	2
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	35	1

¹ delete or add other activities as appropriate