



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Enviromental Physics

Course

Field of study

Technical Physics

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

3/6

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

Number of hours

Lecture

20

Laboratory classes

0

Other (e.g. online)

0

Tutorials

10

Projects/seminars

0

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

dr inż. Justyna Barańska

Responsible for the course/lecturer:

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Prerequisites

1. Basic knowledge concerning physics, mathematics and quantum physics.
2. Solving elementary physical problems based on acquired knowledge, ability to acquire information from given sources.
3. Understanding of necessity of own competence broadening, readiness to cooperate within group.

Course objective

1. Hand over basic knowledge concerning Environmental Physics : atmospheric physics, problems related to toxicity and general environmental pollution
2. Mold students abilities to solve physical problems, analyze results, prepare a computer presentation based on acquired knowledge.
3. Develop students abilities within literature study.
4. Mold students abilities to cooperate within group



Course-related learning outcomes

Knowledge

1. Orderly knowledge of physical phenomena in the field of classical experimental physics, quantum mechanics and differential equations [K1_W01; K1_W04]
2. Mathematical knowledge necessary to description of physical laws and solving physical problems, covering: apply Laplace transform to solutions of the diffusion equation [K1_W03]

Skills

1. Using mathematical and analytical knowledge to phenomenon description, and form and solve physical problems [K1_U01].
2. Using (with understanding) recommended knowledge sources: literature, data base and others. Ability of interpretation, conclusions, form and justification of opinions [K1_U02].
3. Preparing and presenting an computer presentation in Polish [K1_U04]

Social competences

1. Ability to responsible work on appointed tasks, also in group [K1_K01].
2. Responsibility for work effects, reliability and interpretation of obtained results. Obey professional ethics [K1_K02].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

W01, W03, W04 Written exam

U01, Written exam

U02, U04 Computer and oral presentation Evaluation of answers

K01, K02 Evaluation of activity on exercises

100% - 90% (5.0)

80% - 89% (4.5)

70% - 79% (4.0)

60% - 69% (3.5)

50% - 59% (3.0)

0% - 49% (2.0)

Programme content

1. atmosphere physics
2. elements of weather and climate
3. transport of pollutants in the environment
4. acoustics and noise pollution
5. Additional content depending on the topics prepared by the students



presentations

Teaching methods

Lecture: multimedial presentation, animations, solving example tasks

Exercises: practical exercises, discussion.

Bibliography

Basic

1. Egbert Boeker, Rienk van Grondelle: Fizyka Środowiska, PWN 2002

Additional

1. Teodor Kopcewicz: Fizyka Atmosfery, PWN 1956

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	3,0
Classes requiring direct contact with the teacher	30	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	20	1,0

¹ delete or add other activities as appropriate