| Study program | Level of the study program | | **First cycle** | |
|---|---|---|---|---|
| | Study program name | | **Physics Education** | |
| Course name | **ENVIRONMENTAL PHYSICS** | | | |
| Course ID | Semester | Course status | ECTS credits | L+E |
| **PHY8411** | **V or VI** | **ELECTIVE** | **4** | **2+1** |
| Lecturer | | | | |
| Aims and intended learning outcomes | The objective of the course is to acquaint students with the description of environmental phenomena using physical principles.<br>Learning outcomes:<br>● Understand the physical foundations necessary for describing environmental phenomena.<br>● Apply theoretical knowledge from physics in experimental work and the description of environmental phenomena. | | | |

Course content

- Definition of basic concepts: microenvironment, energy exchange, mass transport, mass and energy, biosphere;
- Behavior and modeling of temperature in the atmosphere, soil, and water in nature;
- Physical description: water vapor, gases, air pollutants in the environment, wind, and solar radiation;
- Thermal properties and water flow in the soil;
- Thermodynamic aspects of human functioning, as well as the plant and animal world;
- Quantitative examples accompanying the subject content.

Equipment for practical work: experimental setup for investigating the impact of gravity on plants, solar collector, luxmeter, device for measuring fluid flow velocity, photometer for measuring air pollution.

| Student workload (hours) | | Grading | |
|---|---|---|---|
| Lectures and Exercises | 45 | Assessment method | Points |
| Exam preparation | 55 | Midterm exam | 40 |
| Total | 100 | Assignments | 20 |
| | | Final exam | 40 |
| | | Total | 100 |

Literature


1. Lecture notes
2. G. S. Campbell, *An Introduction to Environmental Biophysics*, Springer, 1997.
3. N. Mason, P. Hughes*, Introduction to Environmental Physics*, Taylor and Francis, 2001.


Remarks