



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Microbiology

Course

Field of study

Environmental Protection Technology

Area of study (specialization)

-

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

3/5

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

Number of hours

Lecture

30

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

prof. dr hab. inż. Ewa Kaczorek

Responsible for the course/lecturer:

Prerequisites

The student starting this subject should have a basic knowledge of biology, including the construction of prokaryotic and eukaryotic cells. He should also be able to obtain information from specified sources.

Course objective

Assumptions and objectives of the course: basic information about selected groups of microorganisms, their morphology and physiology, the possibility of their use in bioprocesses. Microorganisms in the aquatic and soil environment and their role and importance, dependencies between microorganisms.



Course-related learning outcomes

Knowledge

1. Student has knowledge in the field of general and environmental microbiology - [K_W07]
- 2 Student is able to describe the basic development trends related to the use of microorganisms in environmental technologies - [K_W11]

Skills

1. Student has skills to obtain the necessary information from the literature and other sources related to the biological sciences, the ability to link them with other sciences - [K_U01]
2. Student can independently determine the direction of further education - [K_U05]
3. Student uses correctly the terminology of microbiology - [K_U08]

Social competences

1. Student understands the need for self-study and improve their professional competence - [K_K01]
2. Student is aware of the importance of microorganisms in the environment and biotechnological processes - [K_K02]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Stationary exam / on-line exam through e-courses:

Knowledge acquired during the lecture is verified by two 45-minute written test carried out during the 7th and 15th lectures. Each test consists of 20 test questions (multiple choice test) and 5 open-ended questions. Passing threshold: 50% of points.

Programme content

The course covers the following topics: the subject of microbiology; morphology of bacteria, fungi, and viruses; vegetative forms and spores; cellular metabolism; biochemical pathways and enzymatic catalysis; primary and secondary metabolites; microorganisms for biotechnological processes; safe lab work with the microorganisms; methods of microorganisms storage; environmental microbiology; systems of direct and indirect dependencies between microorganisms; the role and importance of microorganisms in the environment, water and soil; indicator microorganisms; self-purification of waters and zones saprobic.

Teaching methods

Lecture with multimedia presentation, discussion with students.

Bibliography

Basic

1. Władysław J. H. Kunicki-Goldfinger „Życie bakterii”, Wydawnictwo Naukowe PWN



2. Hans G. Schlegel „Mikrobiologia ogólna”, Wydawnictwo Naukowe PWN

3. Nicklin J., Graeme-Cook K., Killington R., „Mikrobiologia”, Wydawnictwo Naukowe PWN

Additional

1. Abigail A. Salyers, Dixie D. Whitt, „Mikrobiologia” Wydawnictwo Naukowe PWN

2. Jadwiga Baj , Z. Markiewicz, „Biologia molekularna bakterii”, Wydawnictwo Naukowe PWN

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	45	1,8
Student's own work (literature studies, preparation for tests) ¹	30	1,2

¹ delete or add other activities as appropriate