

Title Introduction to biotechnology	Code 1010701361010700584
Field Environmental Protection Technologies	Year / Semester 3 / 6
Specialty -	Course core
Hours Lectures: 2 Classes: 1 Laboratory: 4 Projects / seminars: -	Number of credits 6
	Language polish

Lecturer:

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Status of the course in the study program:

Introduction to biotechnology

Assumptions and objectives of the course:

Contents of lectures have approximation ton capability and potential of modern biotechnology for clean-up of environment. This knowledge should facilitate future cooperation of student with specialists from domain of biotechnology. Should sensitize the students on potential threats and benefits of GMO and acquaint students with the use of biotechnological methods in biomonitoring.

Contents of the course (course description):

- Environmental biotechnology: definition, main fields of applications. Microorganisms and plants as the tools for environmental cleaning. Methods of microorganisms cultivation. Immobilized microorganisms. Enzymes in environmental biotechnology: molecular structure, functions, catalytic activity, factors influencing enzyme activity, applications. Biotechnological processes and their biological and biochemical fundamentals. Composting of organic materials: solid-state fermentation, microbiology, technology devices. Phytoremediation of soil, water and air. Water- and energy-saving processes. Bioremediation of petrochemical pollutants. Genetically modified organisms. Biotechnology in biomonitoring.

Introductory courses and the required pre-knowledge:

- Fundamental knowledge on biology, microbiology and bioprocess engineering.

Courses form and teaching methods:

- Lecture + laboratory

Form and terms of complete the course - requirements and assessment methods:

-Written examination included basic questions presented in lectures and in the basic literature for this object.

Basic Bibliography:

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Additional Bibliography:

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