SYLLABUS

Name: ***Ecological, social and economical aspects of biotechnology (BioAIS-BF>SMs2ESp2O)***
Name in Polish:
Name in English: ***Ecological, social and economical aspects of biotechnology***

Information on course:

Course offered by department: Faculty of Energy and Environmental Engineering
Course for department: Silesian University of Technology

Default type of course examination report:

ZAL

Language:

English

Short description:

Expand the awareness and knowledge necessary to understand the social, economic, legal and other non-technical conditions of engineering activities, especially those related to biotechnology.

Description:

Assessing the benefits and risks of releasing genetically modified organisms into the environment. Ethical aspects of genetic and cellular manipulation.
Environmental implications of the use of advanced biomaterials and nanomaterials.
Forms and procedures for protection of intellectual and industrial property in biotechnology. Quality management systems in biotechnology and related industries. Economic and organizational issues of biotechnology.

Bibliography:

National Academies of Sciences, Engineering, and Medicine. 2016. Gene
Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values. Washington, DC: The National Academies Press. doi: 10.17226/23405.

Louwaars, N.; Jochemsen, H. An Ethical and Societal Analysis for Biotechnological Methods in Plant Breeding. Agronomy 2021, 11, 1183.

Learning outcomes:

Knowledge: knows and understands:
Detailed issues of technologies used to obtain biomaterials and their use in the latest technologies, including technologies of advanced materials and nanomaterials (K2A_W07)
Social, economic, legal and other non-technical conditions of engineering activities, including those related to environmental problems, related to the implementation of industrial biochemical processes (K2A_W14)

Skills: be able to
-Make a preliminary economic analysis of undertaken actions (K2A_U18)
Engineering
- Diagnose problems, predict effects and explain the mechanisms of biological processes in various industries (K2A_U21)

Assessment methods and assessment criteria:

The student, in order to receive credit, prepares three essays on topics given by the class instructor or, proposed independently. In the case of self-proposed topics, the teacher's approval of the topic is required.

Element of course groups in various terms:

Course group description	First term	Last term
missing group description in English (BioAIS-BF>2(1))	2020/2021-Z	

Course credits in various terms:

Biotechnology, full-time master degree studies 3 sem. (BioAIS-SM3)

Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	2	2020/2021-Z	

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Signature