

Course Syllabus

I. General Information

Course name in English	Microbial diversity in environment
Course name in Polish	Różnorodność mikroorganizmów w środowisku
Programme	Bioanalytical technologies
Level of studies (BA, BSc, MA, MSc, long-cycle MA)	MSc
Form of studies (full-time, part-time)	Full-time
Discipline	Biological sciences
Language of instruction	English

Course coordinator/person responsible	Dr Agnieszka Kuźniar
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Type of class (<i>use only the types mentioned below</i>)	Number of teaching hours	Semester	ECTS Points
lecture			6
tutorial	30	III	
classes	30	III	
laboratory classes			
workshops			
seminar			
introductory seminar			
foreign language classes			
practical placement			
field work			
diploma laboratory			
translation classes			
study visit			

Course pre-requisites	Knowledge in biochemistry, ecology and microbiology
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II. Course Objectives

C1 - To acquiring knowledge about the microbial diversity in different environment (aboveground and subsurface environment),
C2 - To identify extreme environments and learning the mechanisms of adaptation of microorganisms to these environments
C3 - To understand ecology of microorganisms - relationship of microorganisms with one another and with their environment.

III. Course learning outcomes with reference to programme learning outcomes

Symbol	Description of course learning outcome	Reference to programme learning outcome
KNOWLEDGE		
W_01	knows the specific terminology used in microbiology and bio-analytical technologies, understands and is able to define complex phenomena and processes occurring in living organisms	K_W01
W_02	has advanced knowledge of biochemistry, microbiology and biology necessary for practical use in ecology of microorganisms	K_W02
SKILLS		
U_01	apply techniques in the field of microbiology	K_U01
U_02	proficiently uses literature in the field of microbiology in the language as courses are provided and another modern language, shows knowledge in specialised vocabulary in the field of microbiology, uses modern foreign language at level B2+	K_U02
U_03	is able to critically select the available information, including those from the electronic sources and based on them to formulate reasonable judgments	K_U03
U_04	regularly updates the knowledge in natural sciences and knows its practical application, understands the need to follow regularly the scientific literature as well as to familiarize himself with scientific journals to deepen his knowledge	K_U16, K_U11
SOCIAL COMPETENCIES		
K_01	is aware of the meaning, value, and need to analyse the environment	K_K01
K_02	correctly identifies and resolves dilemmas associated with the profession and is aware of the need for ethical conduct during planning and carrying out research experiments	K_K04

IV. Course Content

<ol style="list-style-type: none"> 1. Microbial diversity in subsurface environment 2. Soil microbial diversity 3. Structure and activities of microbial communities in aquatic environment 4. Plant microbiome 5. Animals microbiome 6. Microbial life in extreme and unusual little-explored environments 7. Microbial interactions and interactions with microorganisms and environment

V. Didactic methods used and forms of assessment of learning outcomes

Symbol	Didactic methods <i>(choose from the list)</i>	Forms of assessment <i>(choose from the list)</i>	Documentation type <i>(choose from the list)</i>
KNOWLEDGE			
W_01	Conventional lecture Discussion	Test / Written test	Evaluated test / written test

W_02	Conventional lecture	Test / Written test	Evaluated test / written test
SKILLS			
U_01	Laboratory classes	Report	Protocol / report print-out/ report file
U_02	Case study	Report	Protocol / report print-out/ report file
U_03	Case study	Report	Protocol / report print-out/ report file
U_04	Case study Case study	Report Presentation	Protocol / report print-out/ report file Presentation rating card
SOCIAL COMPETENCIES			
K_01	Case study Discussion	Report	Protocol / report print-out/ report file
K_02	Case study Discussion	Report	Protocol / report print-out/ report file

VI. **Grading criteria, weighting factors.....Student workload**

Tutorial: Tests – 80%, preparation of report and timeliness in completing them – 10%, Presentation rating card - 10%

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Note (5)	student accomplishes the assumed learning outcomes to a very good degree	demonstrates knowledge of the education content at the level of 95-100%
Note (4,5)	student accomplishes the assumed learning outcomes to an extent over good	demonstrates knowledge of the education content at the level of 85-94 %
Note(4)	student accomplishes the assumed learning outcomes to a good degree	demonstrates knowledge of the education content at the level of 75-84%
Note (3,5)	student accomplishes the assumed learning outcomes to a quite good degree	demonstrates knowledge of the education content at the level of 65-74%

Note (3)	the student accomplishes the assumed learning outcomes to a sufficient degree	demonstrates knowledge of the education content at the level of 55-64%
Note (2)	the student accomplishes the assumed learning outcomes to an insufficient degree	demonstrates knowledge of the education content at the level below of 55%

VII. Student workload

Form of activity	Number of hours
Number of contact hours (with the teacher)	70 (60 + 10 individual consultation)
Number of hours of individual student work	80

VIII. Literature

Basic literature
Ogunseitan, O. (2008). Microbial diversity: form and function in prokaryotes. John Wiley & Sons.
Additional literature