

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Environmental Biology and ekology		Code 1010134231010130895
Field of study Environmental Engineering Extramural First-	Profile of study (general academic, practical) (brak)	Year /Semester 2 / 3
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 30 Classes: - Laboratory: 16 Project/seminars: -		No. of credits 6
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 6 100%
Responsible for subject / lecturer: dr Michał Michałkiewicz email: Michal.Michalkiewicz@put.poznan.pl tel. 61 665 24 16 Faculty of Civil and Environmental Engineering ul. Piotrowo 5 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of the biology and ecology of the range of material from high school.
2	Skills	The ability to use literature and self-education, making observations, drawing conclusions, working in a group.
3	Social competencies	Is aware of the need to learn, able to work in a group.
Assumptions and objectives of the course: - Information on biology in sanitary engineering processes. Biological processes and phenomena to occurring in environment. General information of ecology.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
Skills:		
Social competencies:		
Assessment methods of study outcomes		
- Examination, tests, exercise reports		
Course description		

<p>- Structure of organisms. Cell and tissues ? differences in structure of plant and animal organism. Profile of Procaryota and Eucaryota. Basic information on botanic, zoology, morphology and physiology of organisms and micro-organisms. Classification of selected organism living in biosphere and their participation in circulation of matter. General characteristic and effect on biosphere selected unit of classification connected with environmental engineering. Methods of water disinfection ? chlorinating, ozonating and UV-rays. Microbiology of the air ? methods of examination and disinfection. Pollution of the air atmospheric. Basic information about reproduction and genetics of organisms. Basic plant structures living on Earth. Methods of protection of objects and areas which have big natural value. Structure and working of ecosystem. Sources and flow of energy. Biogeochemical cycles. Ecology of organisms, populations, biocenosis, ecosystem and topography. Characteristic of ecological systems and factors. Influence of anthropopression on environmental. Threats of ecological balance and standards and environmental tidiness. Methods of researches and valorisation of environmental.</p>		
<p>Basic bibliography:</p>		
<p>Additional bibliography:</p>		
<p>Result of average student's workload</p>		
<p>Activity</p>		<p>Time (working hours)</p>
<p>Student's workload</p>		
<p>Source of workload</p>	<p>hours</p>	<p>ECTS</p>
Total workload	113	4
Contact hours	66	2
Practical activities	15	1