

Nazwa zajęć/ <i>Course title:</i>	<b>Propedeutyka biotechnologii</b>	ECTS	<b>1</b>
Nazwa zajęć w j. angielskim/ <i>Course title in English:</i>	<b>Introduction to biotechnology</b>		
Zajęcia dla kierunku studiów/ <i>Degree program name:</i>	<b>Biotechnology</b>		

Język kursu/ <i>Course language:</i> English		Poziom studiów/ <i>Study level:</i> 1	
Typ studiów/ <i>Form of studies:</i> x intramural <input type="checkbox"/> extramural	Status zajęć/ <i>Course status</i> <input type="checkbox"/> podstawowe/ <i>basic</i> x kierunkowe/ <i>major</i>	X obowiązkowe/ <i>mandatory</i> <input type="checkbox"/> do wyboru/ <i>elective</i>	Semestr/ <i>Semester:</i> 2 <input type="checkbox"/> semestr zimowy/ <i>winter semester</i> x semestr letni/ <i>summer semester</i>
Rok akademicki/ <i>Academic year:</i>		2022/2023	Numer katalogowy/ <i>Catalogue number:</i> BBT_BTa-1S-2L-13

Koordynator zajęć/ <i>Course coordinator:</i>	<b>Dr inż. Magdalena Pawełkowicz</b>			
Prowadzący zajęcia/ <i>Teachers responsible for the course:</i>	Employees of the Department of Plant Genetics, Breeding and Horticulture, Institute of biology, SGGW			
Założenia, cele i opis zajęć/ <i>Aims, objectives and description of the course:</i>	The use of biotechnology in plant, animal and food production with special emphasis on: - Methodical basis of plant in vitro cultures, micropropagation and obtaining virus-free seedling materials; to acquaint students with the most important achievements and directions of development of biotechnology, genetic engineering, animal breeding and improvement, diagnostics and therapy. To familiarize students with the technology of brewing and winemaking as well as issues related to biotechnological methods that are used in environmental protection, with particular emphasis on biotechnological methods used in water treatment technology			
Formy dydaktyczne, liczba godzin/ <i>Teaching forms, number of hours:</i>	a) Auditorium classes; number of hours 15;			
Metody dydaktyczne/ <i>Teaching methods:</i>	Lectures, wycieczka po laboratoriach			
Wymagania formalne i założenia wstępne/ <i>Formal requirements and prerequisites</i>	Biology			
Efekty uczenia się/ <i>Learning outcomes:</i>	treść efektu przypisanego do zajęć/ <i>the content of the effect assigned to the course:</i>		Odniesienie do efektu kierunkowego/ <i>Relation to the course outcomes</i>	Siła dla ef. kier*/ <i>Impact on the course outcomes*</i>
Wiedza (absolwent zna i rozumie) <i>/Knowledge: (the graduate knows and understands)</i>	W1	knows the basic definitions of biotechnology, the history and scope of biotechnology	K_W03	2
	W2	has knowledge of the possibilities of using biotechnology in plant and animal production	K_W09	2
			K_W13	2
	W3	knows the basic biotechnologies used in plant and animal production	K_W01	3
			K_W13	2
	W4	knows the basic principles of laboratory animal husbandry	K_W03	2
			K_W09	2
W5	knows the basic biochemical processes used in water treatment technology	K_W13	2	
		K_W01	3	
W6	knows the basic biochemical processes used in water treatment technology	K_W09	3	
		K_W01	3	
W7	knows the process of wine production, knows wine products in accordance with current legislation,	K_W09	3	
		K_W01	3	
Umiejętności (absolwent potrafi) <i>/Skills: (the graduate is able to)</i>	U1	can design a commercial laboratory for micropropagation of plants	K_U12	2
	U2	is able to assess the suitability of biotechnological methods for a specific production effect	K_U17	2
			K_U12	2
	K_U17	2		
U3	is able to interpret the biological and physicochemical results of water analysis and assess whether the controlled process occurs correctly or not	K_U15	3	
U4	knows how to characterize the raw materials used in beer production, knows the basic technologies of beer and malt production	K_U12	2	
Kompetencje (absolwent jest gotów do) <i>/Competences: (The graduate is ready)</i>	K1	is ready to recognize ethical dilemmas in conducting laboratory animal husbandry	K_K07	2
	K2	develops and applies acquired knowledge	K_K08	2
			K_K02	3

to)			
<i>Treści programowe zapewniające uzyskanie efektów uczenia się: /Program contents ensuring the achievement of the learning outcomes:</i>	The use of biotechnology in plant, animal and food production with special emphasis on: - Methodical basis of plant in vitro cultures, micropropagation and obtaining virus-free seedling materials; to acquaint students with the most important achievements and directions of development of biotechnology, genetic engineering, animal breeding and improvement, diagnostics and therapy. To familiarize students with the technology of brewing and winemaking as well as issues related to biotechnological methods that are used in environmental protection, with particular emphasis on biotechnological methods used in water treatment technology		
<i>Sposób weryfikacji efektów uczenia się/ Methods of the verification of the learning outcomes:</i>	A written report on the exercises, a passing grade		
<i>Szczegóły dotyczące sposobów weryfikacji i form dokumentacji osiągniętych efektów uczenia się /Details on the verification methods and of the ways of documenting the learning outcomes:</i>	A written report on the exercises, a passing grade		
<i>Elementy i wagi mające wpływ na ocenę końcową/Elements and weights influencing the final grade:</i>	Report and participation in the discussion, credit for evaluation		
<i>Miejsce realizacji zajęć/ Teaching place:</i>	Classrooms and laboratories		
<i>Literatura/Literature:</i> 1			
<i>UWAGI/ANNOTATIONS</i>			

\*) 3 – zaawansowany i szczegółowy, 2 – znaczący, 1 – podstawowy/ 3 – significant and detailed, 2 – considerable, 1 – basic,

Wskaźniki ilościowe charakteryzujące moduł/przedmiot/*Quantitative summary of the course:*

<i>Szacunkowa sumaryczna liczba godzin pracy studenta (kontaktowych i pracy własnej) niezbędna dla osiągnięcia zakładanych dla zajęć efektów uczenia się - na tej podstawie należy wypełnić pole ECTS /Estimated number of work hours per student (contact and self-study) essential to achieve the presumed learning outcomes - basis for the calculation of ECTS credits:</i>	10 h
<i>Łączna liczba punktów ECTS, którą student uzyskuje na zajęciach wymagających bezpośredniego udziału nauczycieli akademickich lub innych osób prowadzących zajęcia/ Total number of ECTS credits accumulated by the student during contact learning:</i>	0.6 ECTS