


KAPITAŁ LUDZKI
 NARODOWA STRATEGIA SPÓJNOŚCI

 Projekt współfinansowany przez
 Unię Europejską w ramach
 Europejskiego Funduszu
 Społecznego

UNIA EUROPEJSKA
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 FUNDUSZ SPOŁECZNY


Course title		ECTS code	
Microscopy in biological sciences		13.1.1458	
Name of unit administrating study			
Faculty of Biology			
Studies			
faculty	field of study	type	first tier studies (BA), second tier studies (MA)
Faculty of Biology	Medical Biology	form	full-time
		specialty	all
		specialization	all
Faculty of Biology	Biology	type	first tier studies (BA), second tier studies (MA)
		form	full-time
		specialty	all
Faculty of Biology	Genetics and Experimental Biology	specialization	all
		type	first tier studies (BA)
		form	full-time
Faculty of Biology	Natural Resources Conservation	specialty	all
		specialization	all
		type	first tier studies (BA)
		form	full-time
		specialty	all
		specialization	all
Teaching staff			
dr hab. Magdalena Narajczyk, profesor uczelni; dr hab. Wojciech Pokora, profesor uczelni			
Forms of classes, the realization and number of hours		ECTS credits	
Forms of classes		2	
Lecture		Estimating working time	
The realization of activities		Working in contact with the teacher:	
classroom instruction, online classes		Lecture – 15h	
Number of hours		Exam - 2 h	
Lecture: 15 hours		Consultation - 8 h	
		Independent work of the student	
		Preparation of the exam – 25 h	
		Totality – 50 h	
The academic cycle			
2022/2023 winter semester			
Type of course		Language of instruction	
an elective course		english	
Teaching methods		Form and method of assessment and basic criteria for evaluation or examination requirements	
Lecture with multimedia presentation		Final evaluation	
		Examination	
		Assessment methods	
		Written exam: multiple choice and open questions	
		The basic criteria for evaluation	
		Mandatory attendance	
		The exam will cover study material presented in the course of the lectures.	
		Assessment criteria or examination requirements:	
		Obtaining 50%+1 points on the exam, i.e. giving correct answers to more than half of the questions;	

Method of verifying required learning outcomes	
Required courses and introductory requirements	
A. Formal requirements none	
B. Prerequisites none	
Aims of education	
<ol style="list-style-type: none"> 1. Introduction students with modern imaging techniques used in biological sciences. 2. Understanding and the ability to use an appropriate microscopic techniques in research. 3. Ability to interpret the obtained microscopic images. 	
Course contents	
Overview of microscopy used in the study of biological material - from light microscopy to electron microscopy. Methods using microscopy. Preparation of material used for analyzes. Application of microscopy in the diagnosis of civilization and genetic diseases. Analysis of the obtained results.	
Bibliography of literature	
A. Literatura wymagana do ostatecznego zaliczenia zajęć (zdania egzaminu): <ol style="list-style-type: none"> 1. J.J. Bozzola, L.D. Russell Electron microscopy (Principles and Techniques for biologists) 1992 Jones and Barlet Publishers, Boston 2. M. Pavelka, J. Roth Functional Ultrastructure (Atlas of Tissue Biology and Pathology) 2010 Springer-Verlag, Wien 	
The learning outcomes (for the field of study and specialization)	Knowledge
	<ul style="list-style-type: none"> - consistently applies and disseminates the principle of a strict, based on empirical data, interpretation of biological phenomena and processes in research and practical activities - recognizes research problems from the border of biological sciences that require the use of advanced science tools - recognizes the wealth of contemporary approaches and experimental techniques in biological sciences and properly plans to use them to solve given tasks
	Skills
	<ul style="list-style-type: none"> - plans and performs research tasks or scientific assessment in the field of studied biological specialty, under supervision of a supervisor
	Social competence
	<ul style="list-style-type: none"> - understands the need to use recognized sources of scientific and popular science information in the field of biological sciences in order to deepen knowledge
Contact	
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