

Subject card

Subject name and code	Mechanisms of evolution, PG_00132650						
Field of study	Biology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Biosystematics and Ecology of Aquatic Invertebrates -> Department of Evolutionary Genetics and Biosystematics -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Tadeusz Namiotko				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		2.0		18.0	50
Subject objectives	1 To understand the pathways and mechanisms of evolution. 2. Ability to use this knowledge to explain the causes and extent of biodiversity.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BIOLL3_W10] The graduate is familiar with the development and current state of knowledge and the latest trends in biology, as well as their relationship with other natural disciplines		Students will be able to assess the development, current state of knowledge and critically evaluate the latest hypotheses of evolutionary biology, explain why it is the central theory of biology and indicate its relationship to other natural sciences.		[SW3] text preparation/written work		
	[BIOLL3_W06] The graduate will know the characteristics, systematics and understand the evolution of selected groups of organisms including molecular basis and basic concepts and mechanisms of evolution		Students will describe the basic concepts and mechanisms of evolution and explain the causes of biodiversity using selected examples of plants and animals.		[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion		
Subject contents	A short history of evolutionary biology. Major tenets of the evolutionary synthetic theory. Evolution at the population level: Hardy-Weinberg principle, systematic, dispersive and non-periodic factors responsible for elementary evolutionary change, models and examples of the efficiency of natural selection, the concept of the adaptive landscape. Evolution of quantitative traits. Concepts of species, barriers to gene flow, classification and examples of speciation modes. Problems of the genesis of altruistic traits. Limited aggression and evolutionarily stable strategy. Evolutionary benefits and costs of sexuality. The evolution of life histories. Introduction to evolutionary developmental biology. Evolutionary trends and rates of evolutionary change. Evolutionary biology versus creationism.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	essay	51.0%	10.0%
	exam test	51.0%	90.0%
Recommended reading	Basic literature	Futuyma D.J., Kirkpatrick M. 2017. Evolution. Oxford Univ. Press.	
	Supplementary literature	articles on evolutionary biology (e.g. from current and archive issues of Scientific American and from electronic sources)	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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