

Subject card

Subject name and code	General genetics with elements of conservation genetics, PG_00198080						
Field of study	Natural Resources Conservation						
Date of commencement of studies	October 2026	Academic year of realisation of subject				2026/2027	
Education level	Bachelor's studies	Subject group				Obligatory subject group in the field of study Subject group related to scientific research in the field of study	
Mode of study	full-time studies	Mode of delivery				at the university	
Year of study	1	Language of instruction				Polish	
Semester of study	1	ECTS credits				2.0	
Learning profile	academic	Assessment form				credit	
Conducting unit	Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Agnieszka Kaczmarczyk-Ziemia				
	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	3.0	17.0	50		
Subject objectives	Familiarization with the laws of heredity, mechanisms of gene functioning/cooperation, relationship of the genotype-phenotype. Familiarization with methods of determining the genetic structure, population potential and the impact of genetic variation on its level. Indication of genetic targets in the management of natural populations and in conservation activities. Presentation of modern research methods and development of the ability to ask questions, make assessments and solve uncomplicated genetic problems.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[OZPL3_W02] The graduate possesses advanced knowledge and understanding of the mechanisms governing the flow of genetic information, its regulation, the principles of inheritance, and the origins of variation in organisms	describes the mechanisms of the flow of genetic information, explains the rules of inheritance and the sources of variability of organisms			[SW4] test/exam - oral or written		
	[OZPL3_K08] The graduate is ready to systematically update his/her natural knowledge and to apply it in practice	systematically updates natural knowledge and knows its practical applications			[SK8] observation of student's independent or team work		
	[OZPL3_U04] The graduate is able to plan and carry out simple research tasks in the biological sciences under the guidance of a supervisor	performs simple research tasks in the field of general genetics and conservation			[SU4] test/exam - oral or written		
	[OZPL3_K01] The graduate is ready to recognise the limitations in his/her own knowledge and understands the need for continuous learning and development	knows the limitations of their own knowledge and understands the need for continuous learning and development			[SK8] observation of student's independent or team work		

Subject contents	<p>Mendelian inheritance with examples in plants, animals and humans. Inheritance inconsistent with Mendel's rules. Basic properties genes (penetrance, expressivity, pleiotropy, modification). Interaction of allelic and non-allelic genes. Lethal genes. Gender coupling. Recombination of genetic material; gene coupling. Multifactorial inheritance. Population genetic polymorphism and influencing factors changes in the frequency of alleles in populations. Genetic structure of the population. Genetic equilibrium. The relationship between loss of genetic variation and extinction. Genetic, demographic and environmental factors in biodiversity conservation. Gene flow between populations. Genetics and the future of endangered species. Units of protection: evolutionarily significant and management units. Reintroductions.</p>								
Prerequisites and co-requisites									
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="456 546 786 575">Subject passing criteria</th> <th data-bbox="791 546 1137 575">Passing threshold</th> <th data-bbox="1142 546 1481 575">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 582 786 607">final test</td> <td data-bbox="791 582 1137 607">51.0%</td> <td data-bbox="1142 582 1481 607">100.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	final test	51.0%	100.0%		
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final test	51.0%	100.0%							
Recommended reading	<p>Basic literature</p>	<p>Allendorf F.W., Luikart G. 2007. Conservation and the Genetics of Populations, Blackwell Publishing, Oxford, UK Purvis A., Gittleman J.L., Brooks T. (eds). 2005. Phylogeny and Conservation, Cambridge University Press, Cambridge, UK. Brooker R. (ed.) Genetics: Analysis and Principles, 6-th edition. Mc Graw Hill. 2017 Charon K. M., Świtoński M. Animal genetics. PWN Warsaw, 2006. Charon K. M., Świtoński M. Genetics and genomics of animals. PWN Warsaw, 2019 Piątkowska B., Goc A., Dąbrowska G. A collection of tasks and questions in genetics, vol. I General genetics. NCU Publishing House, Toruń 1998.</p>							
	<p>Supplementary literature</p>	<p>Gajewski W. General and molecular genetics. PWN Warsaw, 1987. Korf B. R. Human genetics. Solving medical problems. PWN Warsaw, 2003. Krebs J.E., Goldstein E.S., Kilpatrick S.T. Lewin's GENES XII. Jones & Bartlett Learning; 12th Edition. 2017. Węgleński P.: Molecular genetics. PWN Warsaw, 2012.</p>							
	<p>eResources addresses</p>								
Example issues/ example questions/ tasks being completed	<p>1. The basic structural unit of DNA is: a. nucleosome b. nucleotide c. SNP d. histone 2. Knowing that the incidence of phenylketonuria (recessive homozygotes) is 0.0001, and assuming that the locus responsible for phenylketonuria is in the Hardy-Weinberg equilibrium, indicate how many carriers should be statistically expected in a group of 50 individuals. a. 0.5 b. 2 c. less than 0.5 d. more than 0.5</p>								
Work placement	<p>Not applicable</p>								

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