University of Gdańsk

Subject card

Subject name and code	General genetics with elements of conservation genetics, PG_00198079						
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	1.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Anna Iglikowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	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	15		2.0	8.0	25	
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_W12] The graduate possesses knowledge of statistical methods and IT tools relevant to the field of study.	has knowledge of the use of statistical methods and tools IT in the field related to the field of study	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report [SW3] text preparation/written work [SW5] implementation of a problem task
[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	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU6] demonstration of practical skills
[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
[OZPL3_U05] The graduate is able to apply basic statistical methods and computer techniques and tools to describe phenomena and analyse biological data	applies basic statistical methods as well as IT techniques and tools for the description of phenomena and the analysis of biological data	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU6] demonstration of practical skills

Subject contents

Introduction to classical genetics: Mendel's first and second laws, allelic and non-allelic interaction of genes; lethal, semilethal and subvital genes. Gene lineages. Analysis of the genetic structure of the population. Genetic equalibrum testing. Estimating the level of genetic variation in the populations.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Test I	51.0%	35.0%
worksheet - conservation genetics	51.0%	10.0%
Test II	51.0%	35.0%
Homework I	51.0%	10.0%
Homework II	51.0%	10.0%

Recommended reading

Basic literature	Allendorf F.W., Luikart G. 2007. Conservation and the Genetics of Populations, Blackwell Publishing, Oxford, UKPurvis 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. 2017Charon K. M., Świtoński M. Animal genetics. PWN Warsaw, 2006.Charon K. M., Świtoński M. Genetics and genomics of animals. PWN Warsaw, 2019Piątkowska B., Goc A., Dąbrowska G. A collection of tasks and questions in genetics, vol. I General genetics. NCU Publishing House, Toruń 1998.
Supplementary literature	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.

	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Human blood groups are determined by a series of three multiple alleles IA, IB and i (blood group 0). Allele i is recessive in relation to the others, while alleles IA and IB are codominant. The greatest diversity of blood groups can be expected among numerous offspring born from parents having genotypes as in the set: Genotypes: father and mother a) I^AI^B x ii b) I^Ai x I^BI^B c) I^Ai x I^Bi d) I^AI^A x I^B i 2. The feather type of chickens is determined by one pair of S, s genes and is inherited according to the Zea type. SS homozygotes are scurvy, Ss heterozygotes are weakly scurvy, and SS homozygotes have normal plumage. In a population of 1,800 chickens, there were 900 pieces with ruffled plumage, 300 pieces with slightly ruffled plumage and 600 pieces with normal plumage. a) Calculate the frequencies of genes, genotypes and phenotypes in the initial population.b) Check whether this population is in a state of genetic balance.c) State the expected frequencies of genes, genotypes and phenotypes in the F1 generation.	
Work placement	Not applicable	

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