

Subject card

Subject name and code	Genetics, PG_00207407						
Field of study	Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
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	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		3.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Anna Wysocka				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	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		42.0	75
Subject objectives	Familiarizing with the basic and current genetic issues						
	Broadening the knowledge/understanding of the laws of heredity and the genetic variation.						
	Providing knowledge on the gene function/interaction, understanding the relationship: genotype-phenotype						
	Developing the ability to analyse pedigrees and determine the probability of inheriting genes						
	Familiarizing with methods of analysing the population genetic structure and factors disturbing the population balance						
	Presentation of research methods and development of the ability to ask questions, make assessments, solve uncomplicated genetic problems						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLL3_W03] knows and understands at an advanced level the principles of life functioning at the level of populations, biocenoses and ecosystems, the determinants of biological diversity as well as the mechanisms and molecular basis of the evolution of organisms		
	[BIOLL3_W02] knows and understands at an advanced level the structure and properties of biological macromolecules, mechanisms of metabolism, flow of genetic information, sources of variation in organisms; rules of inheritance	knows and understands the mechanisms of genetic information flow and the sources of organisms variability, explains the rules of inheritance	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report [SW3] text preparation/written work [SW5] implementation of a problem task
	[BIOLL3_U05] is able to prepare written papers and oral presentations on biological issues, using specialized terminology		
	[BIOLL3_U04] is able to carry out simple research tasks or give expert opinions typical for the biological sciences under the supervision of a scientific supervisor		
	[BIOLL3_U02] is able to use statistical methods, IT tools and data analysis techniques to describe biological phenomena, as well as synthesize information from various sources and formulate correct conclusions based on them		
	[BIOLL3_K05] is ready to perform professional roles responsibly, both individually and in teams, including organizing the work of small teams and taking joint responsibility for the implementation of assigned tasks and the results achieved.		
Subject contents	Introduction to classical genetics: Mendel's first and second laws. Pedigree analysis. Allelic and non-allelic interaction of genes. Lethal genes. Chromosomal theory of heredity: genetic lineage. Sex-linked, sex-influenced, and sex-limited inheritance. Genetics of quantitative traits. Analysis the genetic structure of the population. Genetic equilibrium of the population.		
Prerequisites and co-requisites	Brak		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written or oral subtests	51.0%	10.0%
	activity in class and participation in discussions	51.0%	5.0%
	final tests	51.0%	60.0%
	experiment report	51.0%	25.0%

Recommended reading	Basic literature	Bal J. Molecular biology in medicine Elements of clinical genetics. PWN Warsaw, 2011. Boczkowski K. Outline of medical genetics. PZWL Warsaw, 1990. 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 Krebs J.E., Goldstein, E.S. Kilpatrick, S.T. Lewin's, GENES XII., Jones & Bartlett Learning; 12th Edition. 2017. Piątkowska B., Goc A., Dąbrowska G. A collection of tasks and questions in genetics, vol. I General genetics. NCU Publishing House, Toruń 1998. Węgleński P. Molecular genetics. PWN Warsaw, 2012.
	Supplementary literature	Korf B. R. Human genetics. Solving medical problems. PWN Warsaw, 2003.
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Explain the terms: gender-related traits and gender-conjugated traits. 2. The distance between genes A and B is 4 cM, and between genes B and C is 9 cM. Calculate what is the percentage chance of a double crossing-over occurring.	
Work placement	Not applicable	

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