

Subject card

Subject name and code	Basics of human genetics, PG_00147017						
Field of study	Genetics and Experimental Biology						
Date of commencement of studies	October 2025		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	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		2.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Laboratory of Human Genomics and Genetics -> Department of Medical Biology and Genetics -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Anna Kloska				
	Teachers		dr Anna Kloska				
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		4.0		16.0	50
Subject objectives	To familiarize students with the organization of the human genome, the role of genetic factors in the etiopathogenesis of human diseases, and disorders of the inheritance patterns of Mendelian traits. Familiarization with the issues of human genetic variability at the organism and population level. Familiarization with the issues of genetic counseling and therapy of human genetic diseases.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GBEL3_K07] Lifelong learning and updating knowledge in the field of molecular genetics and other disciplines.	the graduate understands the need to update knowledge in the field of human genetics	[SK4] test/exam - oral or written
	[GBEL3_W03] The molecular mechanisms of genetic information transmission and gene expression, as well as the molecular and genetic basis of human physiology and diseases, including infectious diseases.	the graduate explains the mechanisms of human genetic diseases	[SW4] test/exam - oral or written
	[GBEL3_K06] Integrity and honesty in scientific and professional work.	the graduate understands the need for honesty and reliability in performing research in the field of human genetics	[SK4] test/exam - oral or written
	[GBEL3_U01] Independently perform practical tasks in the field of biological sciences and related disciplines, formulate research problems, analyze their results, and draw conclusions.	the graduate can perform simple practical tasks in the field of genetics human	[SU4] test/exam - oral or written
	[GBEL3_W01] Understanding the structure and properties of basic types of biological macromolecules, molecular mechanisms of metabolic pathways and genetic information flow, as well as sources of genetic variability in organisms and mechanisms of evolution; explaining the rules of inheritance, elucidating differences in the structure and functioning of prokaryotic and eukaryotic cells, and understanding the structure and functional relationships at the cellular and tissue levels.	the graduate describes the laws of inheritance in human genetics	[SW4] test/exam - oral or written
Subject contents	Organization of the human genome Monogenic and polygenic inheritance in humans Disorders of single-gene inheritance patterns Genetic variability (mutation, genetic polymorphism) Mitochondrial diseases Genetic variability in the population Epigenetic control of gene expression Phenotypic effect of mutations in humans Dysmorphic features, mechanism and etiology of developmental defects Treatment of genetic diseases Genetic counseling		
Prerequisites and co-requisites	Basic knowledge of the genetics of organisms.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	mid-term exam	51.0%	50.0%
	final exam	51.0%	50.0%
Recommended reading	Basic literature	M.J. Bamshad, J.C. Carey, L.B. Jorde; Genetyka medyczna, Edra Urban & Partner, Wrocław 2021 J.M Friedman, F.J.Dill, M.R. Hayden, B.C. McGillivray: Genetyka. (red. wyd. pol. J. Limon), Urban & Partner, Wrocław 2000 Drewa G., Ferenc T.; Genetyka medyczna; Edra Urban & Partner Wydawnictwo, Wrocław 2011 Bruce R. Korf. Genetyka człowieka. Rozwiązywanie problemów medycznych. Wydawnictwo Naukowe PWN, 2003	
	Supplementary literature	J. Bał (red.) Biologia molekularna w medycynie. Elementy genetyki klinicznej. Wydawnictwo Naukowe PWN, Warszawa 2011, wyd. 3	
	eResources addresses		
	Example issues/ example questions/ tasks being completed		

Work placement	Not applicable
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