University of Gdańsk

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 2024		Academic year of realisation of subject	2025/2026			
Education level	undergraduate 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	2		Language of instruction	Polish			
Semester of study	3		ECTS credits	2.0			
Learning profile	academic		Assessment form				
Conducting unit	Pracownia Genomiki i Genetyki Człowieka -> Katedra Biologii i Genetyki Medycznej -> Faculty of Biology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr Anna Kloska					
	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						
	Additional information: Lecture with multimedia presentation						
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_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
[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_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_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_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

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
final exam	51.0%	50.0%
mid-term 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. Bal (red.) Biologia molekularna w medycynie. Elementy genetyki klinicznej. Wydawnictwo Naukowe PWN, Warszawa 2011, wyd. 3
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed

Work placement	Not applicable

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