University of Gdańsk

Subject card

Subject name and code	Basics of human genetics, PG_00052570		
Field of study	Podstawy genetyki człowieka (Wykład)		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2024/2025
Education level	Bachelor's studies	Subject group	
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 Marcelina Malinowska	
	Teachers	dr Marcelina Malinowska	

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:

Wykład z prezentacją multimedialną

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	0.0	0.0	30

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_W03] A graduate has an advanced knowledge and understanding of: molecular mechanisms of genetic information transfer and gene expression and the molecular and genetic basis of human physiology and disease, including infectious diseases	the graduate explains the mechanisms of human genetic diseases	[SW4] test/egzamin - ustny lub pisemny
[GBEL3_U01] The graduate is able to: independently perform practical tasks in the biological and related sciences, formulate research problems, analyse their results and draw conclusions.	the graduate can perform simple practical tasks in the field of human genetics	[SU4] test/egzamin - ustny lub pisemny
[GBEL3_U03] The graduate is able to: use research apparatus and tools and, following the correct sequence of operations, carry out simple physical, biological or chemical observations and measurements in laboratory work in the biological sciences	---	[SU4] test/egzamin - ustny lub pisemny
[GBEL3_K08] The graduate is prepared to: takes responsibility for equipment/materials entrusted to it and respects the work of others	---	[SK4] test/egzamin - ustny lub pisemny
[GBEL3_K07] The graduate is prepared to: lifelong learning and updating of knowledge in molecular genetics and other fields	the graduate understands the need to update knowledge in the field of human genetics	[SK4] test/egzamin - ustny lub pisemny
[GBEL3_K06] The graduate is prepared to: honesty and integrity 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/egzamin - ustny lub pisemny
[GBEL3_W01] A graduate has an advanced knowledge and understanding of: the structure and properties of the main types of biological macromolecules; the molecular mechanisms of basic metabolic pathways and genetic information flow; the sources of genetic variation in organisms and the mechanisms of evolution. They can explain the principles of inheritance, the differences in structure and function between prokaryotic and eukaryotic cells, as well as the structure and functional relationships at the cellular and tissue levels.	the graduate describes the laws of inheritance in human genetics	[SW4] test/egzamin - ustny lub pisemny

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	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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