University of Gdańsk

Subject card

Subject name and code	Basics of human genetics, PG_00052571		
Field of study	Podstawy genetyki człowieka (Ćw. laboratoryjne)		
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	credit
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 prof. dr hab. Magdalena Gabig-Cimińska dr Jan Lica dr Marta Moskot mgr Martyna Kuczyńska	

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

Additional information:

Analiza przypadków, rozwiązywanie zadań problemowych, wykonywanie doświadczeń.

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 inheritance of genetic diseases and the principles of genetic counseling. Understanding disorders of inheritance patterns of Mendelian traits; familiarization with the use of genetic variations in individual identification. In terms of skills: teaching how to describe mutations in the human genome, estimate genetic risk and interpret results enabling prediction of an increased risk of genetically determined diseases. Familiarization with methods of conducting genetic determinations using molecular techniques.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GBEL3_K08] The graduate is prepared to: takes responsibility for equipment/materials entrusted to it and respects the work of others	the graduate is responsible for the entrusted equipment/materials, and work, and respects the work of others	[SK8] obserwacja samodzielnej lub zespołowej pracy studenta
[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	[SK1] wypowiedź ustna/rozmowa/ dyskusja [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 field of human genetics	[SK4] test/egzamin - ustny lub pisemny [SK8] obserwacja samodzielnej lub zespołowej pracy studenta
[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	the graduate applies the basic research equipment and tools used in human genetics and maintains and performs the correct sequence of activities and simple experiments using them	[SU8] obserwacja samodzielnej lub zespołowej pracy studenta
[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 [SU5] realizacja zadania problemowego
[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_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

Nomenclature of mutations in the human genome. Mapping human genes by linkage analysis. Clinical genetics - family history, principles of preparing a pedigree. Basics of calculating the risk of a genetic disease. Forensic genetics - genetic identification of individuals, kinship testing and paternity determination. Genetic research as a method for tracing the history of human populations (mtDNA). Genetic identification of variants in the *CCR5* gene. Online databases used in human genetics.

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
lab report	51.0%	10.0%
test 2	51.0%	35.0%
test 1	51.0%	35.0%
lab test	51.0%	20.0%

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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