

**Subject card**

<b>Subject name and code</b>	Basics of human genetics, PG_00148831						
<b>Field of study</b>	Medical Biology						
<b>Date of commencement of studies</b>	October 2024	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	undergraduate studies	<b>Subject group</b>			Obligatory subject group in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	3	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	5	<b>ECTS credits</b>			2.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>					
<b>Conducting unit</b>	Pracownia Genomiki i Genetyki Człowieka -> Katedra Biologii i Genetyki Medycznej -> Faculty of Biology						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Anna Kloska				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	0.0	30.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Additional information:  Case studySolving problem tasksPerforming experiments						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		8.0		12.0	50
<b>Subject objectives</b>	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 variability genetic in individual identification. In terms of skills: teaching how to describe human mutations genome, genetic risk estimation and interpretation of results enabling prognosis increased risk of genetically determined diseases. Familiarization with the methods conducting genetic tests using molecular techniques.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLMEDL3_U01] uses basic apparatus and research tools and, maintaining the correct sequence of operations, performs simple physical, biological or chemical observations and measurements in laboratory work in the biological or medical sciences	the graduate uses basic research equipment and tools and, maintaining the correct sequence of activities, performs simple observations and measurements in laboratory work in the field of human genetics; and can estimate the risk of genetic diseases in offspring based on family predispositions and the influence of environmental factors	[SU4] test/exam - oral or written [SU8] observation of student's independent or team work
	[BIOLMEDL3_U05] synthesises data from different sources and draws appropriate conclusions from them	the graduate synthesises data on human genetics from various sources and draws appropriate conclusions on this basis; using information about genetic diseases contained in professional databases	[SU4] test/exam - oral or written [SU5] implementation of a problem task
	[BIOLMEDL3_W06] describes, explains and compares systemic control mechanisms in animal and human organisms (including onto- and phylogenetic points of view) and the neurobiological and genetic basis of different disorders	the graduate describes, explains, and compares systemic control mechanisms in humans and the genetic basis of their disorders; and explains the mechanism of human genetic diseases	[SW4] test/exam - oral or written
	[BIOLMEDL3_K01] understands the need for lifelong learning and to update his/her knowledge of medical biology and related disciplines	the graduate understands the need for lifelong learning and updating knowledge in the field of human genetics; understands the obligation of continuous self-education, broadening and deepening theoretical skills and practical and introducing new achievements in the field of human genetics into professional practice	[SK4] test/exam - oral or written [SK5] implementation of a problem task
	[BIOLMEDL3_K07] Is responsible for the equipment/materials entrusted to him and his own work and respects the work of others	The graduate is responsible for the entrusted laboratory equipment/materials and his/her work and respects the work of others	[SK8] observation of student's independent or team work
	[BIOLMEDL3_W05] knows the structure, properties and functions of human cells, tissues and organs; human physiological and biochemical processes and mechanisms of disease pathophysiology	the graduate knows and understands the mechanisms of the pathophysiology of genetic diseases	[SW4] test/exam - oral or written
[BIOLMEDL3_W02] describes the structure and properties of basic types of biological macromolecules, molecular mechanisms of the pathways of basal metabolism and flow of genetic information, and sources of variation in organisms; explains the rules of inheritance	the graduate describes the laws of inheritance concerning human genetics	[SW4] test/exam - oral or written	
Subject contents	<p>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</p>		
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
	test 2	50.0%	35.0%
	lab test	50.0%	20.0%
	lab report	50.0%	10.0%
	test 1	50.0%	35.0%

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

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