University of Gdańsk

Subject card

Subject name and code	Medical applications of population genetics, PG_00149297		
Field of study	Medical Biology		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
Education level	undergraduate studies	Subject group	Obligatory subject group in the field of study Optional subject group
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	1.0
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 hab. Joanna Jakóbkiewicz-Banecka	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

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	15	5.0	5.0	25

Subject objectives

1. Familiarizing with the molecular basis of selected hereditary and cancer diseases; understanding the main approaches in the treatment of genetically determined diseases.
2. Learning about examples of monogenic and polygenic diseases from clinical, molecular, and diagnostic perspectives.
3. Getting acquainted with the structure of human chromosomes, with particular emphasis on genes whose mutations are responsible for the development of hereditary diseases.
4. Learning about and characterizing phenomena such as lyonization and its disorders, as well as Y chromosome degeneration.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLMEDL3_W12] is oriented in the development and current state of knowledge and the latest trends in medical biology; indicates their relationship with other disciplines of natural or medical sciences	Understands the molecular mechanisms of genetic information transmission and gene expression, as well as the molecular and genetic basis of human diseases.	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>1. Classification of human genetic diseases
2. Multifactorial diseases
3. The process of lyonization and its disorders X-linked diseases
4. Y chromosome degeneration and its consequences disorders associated with Y chromosome mutations
5. Structure of the human karyotype characterization of individual chromosomes
6. Comprehensive overview of monogenic diseases genetic basis, symptoms, treatment</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Scope of knowledge in genetics, including human genetics</td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>test</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>J.M Friedman, F.J.Dill, M.R. Hayden, B.C. McGillivray: Genetyka. (red. wyd. pol. J. Limon), Urban & Partner
Genetyka medyczna, L.B. Jorde, J.C. Carey, M.J. Bamshad,, red. M. Borowiec, Edra Urban & Partner, 2021
J.M. Connor, M.A. Ferguson-Smith: Podstawy genetyki medycznej. PZWL
EPIGENETYKA, John C. Lucchesi, PWN, 2021
GENETYKA MEDYCZNA I MOLEKULARNA, Jerzy Bal, PWN, 2017</td></tr><tr><td>Supplementary literature</td><td>GENETYKA MEDYCZNA, Bogdan Kałużewski , Casey Carey , Lynn Jorde , Michael J. Bamshad, Edra Urban & Partner, 2013
GENETYKA MEDYCZNA, Edward Tobias, PZWL, 2014</td></tr><tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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