University of Gdańsk

Subject card

Subject name and code	Genetic Conditioning of Mental Disorders, PG_00152025						
Field of study	Psychology						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2029/2030			
Education level	uniform Master's 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	4		Language of instruction	Polish			
Semester of study	7		ECTS credits	3.0			
Learning profile	academic		Assessment form	exam			
Conducting unit	Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Anna Wysocka				
	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						
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		10.0		50.0	90
Subject objectives	Familiarizing students with the basics of genetics, including the behavioral genetics. Understanding the basic rules of heredity, genetic variability, mechanisms of gene functioning/cooperation, genotype-phenotype relationships. Understanding the mechanisms of inheritance of diseases with different genetic determinants: mono- and polygenic, mainly mental disorders. Getting to know research methods in the behevioral genetics.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[PSYCHJ5_W06] He/she has in-depth knowledge of human development in the life cycle, in biological, psychological and social aspects.	understands the role of genes in human development; can define basic genetic concepts in the aspect of developmental disorders; describes selected diseases	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report [SW5] implementation of a problem task
[PSYCHJ5_U02] He/she is able to use and integrate theoretical knowledge in the field of psychology and related disciplines in order to analyse complex psychological, educational, aid or therapeutic problems, as well as diagnose and design practical activities.	can assess the potential involvement of genetic factors in a mental disorder in the in the context of patient therapy	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU8] observation of student's independent or team work
[PSYCHJ5_W11] He/she has organized knowledge of ethical principles and norms and professional ethics; he/she knows the legal, organizational, and ethical conditions of the performed professional activity.	understands that individuality human beings are influenced by both genes and the environment; understands the rules of human genetics and the mechanisms of inheritance of genetic diseases in in the course of which there are mental disorders; knows the main research methods of behavior genetics including molecular methods	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report [SW5] implementation of a problem task
[PSYCHJ5_K06] He/she is responsible for his/her own preparation for work, decisions taken, actions taken and their effects, he/she feels responsible towards people for whom good he/she tries to act, he/she expresses such an attitude in the environment of specialists and indirectly models this approach among others.	is cautious about expressing opinions about disability intellectual disorders in people with genetic disorders; is empathetic and oriented towards providing support to patients with genetic development disorders	[SK8] observation of student's independent or team work
[PSYCHJ5_U04] He/she is able to clearly, coherently and precisely express himself/herself orally and in writing in Polish and in a foreign language, he/she has the ability to construct extensive oral and written justifications on topics related to various psychological issues using various theoretical approaches, using the achievements of both psychology and other scientific disciplines.	discusses contemporary genetic problems	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU5] implementation of a problem task [SU8] observation of student's independent or team work
[PSYCHJ5_U08] He/she is able to efficiently use selected theoretical approaches to analyse the undertaken practical activities.	is able to perform an analysis of the pedigree of a monogenic trait; solves simple genetic problems	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU8] observation of student's independent or team work
[PSYCHJ5_U05] He/she has in-depth skills to present his/her own ideas, doubts, and suggestions, to support them with extensive argumentation in the context of selected theoretical perspectives, views of various authors, while being guided by ethical principles.	is able to apply knowledge of specific genetic disorders in the extension of diagnostic criteria and adapting the therapeutic approach to the patient	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU4] test/exam - oral or written [SU5] implementation of a problem task [SU8] observation of student's independent or team work
[PSYCHJ5_K01] He/she has deeper awareness of the level of his/her knowledge and skills, he/she understands the need for continuous personal and professional development.	understands the need to work with a team of specialists from fields of medicine and nutrition for correct diagnosis and therapy of the patient	[SK8] observation of student's independent or team work

Subject contents	Introduction to human genetics, including the genetics of behavior: Mendel's I and II laws; analysis of pedigrees; allelic and non-allelic gene interaction; lethal genes; heritability; genetic anticipation; genomic imprinting; sex-linked, sex-influenced, and sex-limited inheritance; genetics of quantitative traits. Research methods of behavior genetics. Fundamentals of molecular genetics: DNA structure and gene expression; organization of the human genome; molecular techniques used in genetic research. Genetic factors in the etiology of mental disorders and intellectual disability: types and causes of mutations; monogenic inherited disorders; disorders resulting from chromosomal aberrations; polygenic disorders. Extragenic inheritance: epigenetics. Mitochondrial inheritance.
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
final test (exam)	51.0%	80.0%
written student work in class	0.0%	10.0%
activity in class	0.0%	10.0%

Recommended reading		
	Basic literature	Brooker R. (ed.) Genetics: Analysis and Principles, 6-th edition. Mc Graw Hill. 2017Charon K. M., Świtoński M. Genetics and genomics of animals. PWN Warsaw, 2019Korf, B. R. Human genetics. Solving medical problems. PWN Warsaw, 2003. Oniszczenko W., Dragan W.Ł. Genetics of behavior in psychology and psychiatry. Wydawnictwo Naukowe SCHOLAR, Warsaw, 2008.Piątkowska B., Goc A., Dąbrowska G. A collection of tasks and questions in genetics, vol. I General genetics. NCU Publishing House, Toruń 1998. Plomin, R., DeFries, J.C., McClearn, G.E., McGuffin, P. Genetics of behavior. PWN, Warsaw, 2001.Rybakowski, J., Hauser, J. (eds). Molecular genetics of mental disorders. Polish Psychiatric Association, Kraków, 2002
	Supplementary literature	Charon K. M., Świtoński M. Animal genetics. PWN Warsaw, 2006.Węgleński P. Molecular genetics. PWN Warsaw, 2012.Drewa, G. Fundamentals of genetics for students and doctors. Volumed Wrocław, 1995.Krebs J.E., Goldstein, E.S. Kilpatrick, S.T. Lewin's, GENES XII., Jones & Bartlett Learning; 12th Edition. 2017.Wysocka A., Lipowska M., Kilikowska A. 2010. Genetics in solving dyslexia puzzles: the overview. Acta Neuropsychologica, 8(4): 315-331Wysocka A., Lipowska M. 2010. Genetic basis of the co-occurrence of ADHD and developmental dyslexia. Psychiatry and Clinical Psychology, 10 (3): 188-193Zawadzki, B. Temperament-genes and environment. Intra- and inter-population comparisons. Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2002
	eResources addresses	

Example issues/ example questions/ tasks being completed	Fenylketonuria is a genetic disease conditioned by an autosomal recessive allele. A healthy pair of parents has a child with phenylketonuria. What is the probability of a healthy baby being born for this couple? a. 1/8 b. 1/4 c. 3/4 d. 1/16
Work placement	Not applicable

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