KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI

Projekt współfinansowany przez Unię Europejską w ramach Europejskiego Funduszu Społecznego

UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ SPOŁECZNY

Course title	ECTS code
Human genome identity	13.1.1890

Name of unit administrating study

Studies

faculty	field of study		
Faculty of Chemistry	Chemistry, Agrochemistry, Chemical Business, Environmental Protection	type	all
		form	all
		specialty	all
		specialization	all
Faculty of Economics	Economics, Business and Environmental Technology	type	all
		form	all
		specialty	all
		specialization	all
Faculty of Languages	American Studies, German Philology, Romance Studies, Studies in Classical Philology, Kashubian Ethno studies, English Studies, Polish Philology, Philology	type	all
		form	all
		specialty	all
		specialization	all
Faculty of History	Ethnology, History	type	all
		form	all
		specialty	all
		specialization	all
Faculty of Mathematics, Physics and Informatics	Mathematics, Bioinformatics, Informatics, Physics	type	all
		form	all
		specialty	all
		specialization	all
Faculty of Social Sciences	Special Pedagogy, Pedagogy, Pre-school and Early School Education, Land Management, Socio-economic geography with elements of GIS	type	all
		form	all
		specialty	all
		specialization	all
Faculty of Oceanography and Geography	BRAK TŁUMACZENIA, Geography, Geology, Oceanography	type	all
		form	all
		specialty	all
		specialization	all
Faculty of Law and Administration	Administration, Law, Criminology	type	all
		form	all
		specialty	all
		specialization	all
Faculty of Management	Information Science and Econometrics, Management and Marketing, Finance and Accounting, Management, Finance and Banking	type	all
		form	all
		specialty	all
		specialization	all

Teaching staff

prof. dr hab. Magdalena Gabig-Cimińska

Forms of classes, the realization and number of hours	ECTS credits
Forms of classes	

Lecture **The realization of activities** classroom instruction **Number of hours** Lecture: 30 hours	2 Estimated work time •Work with the teacher: participation in lectures – 15 hours participation in consultations – 8 hours participation in exam – 2 hours •The unassisted student work: studying the literature, preparation for classes and exam – 25 hours Total: 50 hours

The academic cycle

2023/2024 summer semester

Type of course	**Language of instruction**
- an elective course - obligatory	english

Teaching methods	**Form and method of assessment and basic criteria for eveluation or examination requirements**
- Lecture with multimedia presentation and report on literature review - multimedia-based lecture	**Final evaluation** Graded credit **Assessment methods** Credit: multiple choice and open questions **The basic criteria for evaluation** Minimum 51% of points from the test, i.e. giving correct answers to more than half of the questions Attendance of at least 85% of lectures

Method of verifying required learning outcomes

zakładany efekt kształcenia	Lecture with multimedia presentation	report on literature review
	Wiedza	
P6U_W, P6S_WG	Final evaluating test	
	Umiejętności	
P6U_U, P6S_UW, P6S_UU	Final evaluating test	
	Kompetencje	
P6U_K, P6S_KK, P6S_KO, P6S_KR	Final evaluating test	

Required courses and introductory requirements

A. Formal requirements

None

B. Prerequisites

English (lecture, literature and final validation are in English)
Basic knowledge in molecular biology, biochemistry and genetics

Aims of education

The course focuses on human genome identity, covering the methodology of its research and expanding to global viewpoints using a framework of perspectives from biology, genetics, medicine, and public health; shaping an awareness of significance of the knowledge on the human molecular genetics.

Course contents

Scope of Genetics. History and timeline of events. Nature of genetic material. DNA biometrics. Cellular and molecular mechanisms of genetic information flow in humans. Transmission Genetics. Basic concepts of inheritance. Gene and regulation of gene activity. Human genome organization and projects. Editing the human genome. Human genetic disorders. Evidence for genetic factors in common diseases. Personalized medicine: individual genetic makeup. Global medical strategies. Single cell and comprehensive studies. High throughput technologies and bioinformatics: microarrays and biochips, robotics and automation. Multiomics data, genome and protein atlases.

Bibliography of literature

A. Literature required for the final completion of the course (passing the exam):
A.1. used during classes
Hartl & Jones: Essential Genetics: A Genomic Perspective, Jones & Bartlet, 2002
Griffith et al: An Introduction to Genetic Analysis, Freeman, 2004
Pasternak: An Introduction to Molecular Human Genetics. Fritzgerald. 2ndEdiition, 2005
Lewis: Human Genetics. WCB & McGraw. 7th Edition, 2007
Sudbery: Human Molecular Genetics. Prentice-Hall. 3rd Edition, 2010
Strachan & Read: Human Molecular Genetics. Garland Edition. 4th Edition, 2011
Weaver: Molecular Biology. 5th Edition, McGraw Hill Higher Education, 2012
Watson et al.: Molecular Biology of the Gene. 7th Edition, 2014
A.2. studied independently by the student
Ricki: Human Genetics: Concept & Application, 10th Edition
Cummings: Human Heredity: Principles and Issues, 10th edition
B. Supplementary Literature
Laboratory Biorisk Management: Biosafety and Biosecurity - CRC Press, Reynolds M. Salerno, Jennifer Gaudioso, 2015
Scientific articles from public resources

The learning outcomes (for the field of study and specialization)

P6U_K, P6S_KK, P6S_KO, P6S_KR
P6U_W, P6S_WG
P6U_U, P6S_UW, P6S_UU

Knowledge

describes the structure and properties of basic types of biological macromolecules, molecular mechanisms of basic metabolism pathways and the flow of genetic information, as well as sources of genetic variability of organisms and mechanisms of evolution; explains the rules of inheritance; knows the molecular mechanisms of genetic information transfer and gene expression, as well as the molecular and genetic basis of human physiology and diseases; is familiar with the development and current state of knowledge, as well as the latest trends in molecular genetics and related fields; indicates their relationship with other disciplines of natural or medical sciences and the possibility of their practical use (P6U_W, P6S_WG)

Skills

can independently perform simple practical tasks in the field of biological and related sciences, formulate research problems, analyze their results and draw conclusions; can read and understand scientific texts in English, combines knowledge gained from them; knows and applies specialized English-language vocabulary in the field of biological and medical sciences; can independently study the literature and plan their own career path; can plan their education and learn in an independent and targeted manner (P6U_U, P6S_UW, P6S_UU)

Social competence

is ready to use theoretical knowledge in the laboratory and production practice; is ready to critically assess their own knowledge and methods in the field of molecular biology and related fields; consciously applies the principles of bioethics; is responsible for the safety of their own work and that of others; understands the need for honesty and reliability in the scientific and professional work; understands the need for lifelong learning and updating knowledge of molecular genetics and other fields (P6U_K, P6S_KK, P6S_KO, P6S_KR)

Contact

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