GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Basic Biology, PG_00037479		
Field of study	Biotechnology		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2020/2021
Education level	first-cycle 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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Laboratorium Genetyki Bakterii -> Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Gracjana Klein-Raina	
	Teachers	dr hab. Gracjana Klein-Raina	

Lesson types and methods of instruction

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

PODSTAWY BIOLOGII - wykład - Moodle ID: 7059
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=7059

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	2.0	68.0	100

Subject objectives

Subjects of lectures include basic concepts of biology, including the base structure and function of groups of organisms, their systematics, ecology, evolutionary processes and genetic basis of life. Key messages will be developed and updated with the latest knowledge on the major issues of biology. The lectures, in addition to the basic knowledge of biology, will be presented a brief description of the most important experiments that led to recognition of the fundamental issues in biology. Particular attention will be paid to information useful to biotechnology.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_U02	After completing the course, students can describe and explain the properties of biomolecules and the course of biological processes in the cell.	[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information
K6_W06	After completing the course, students can describe and explain the structure of the prokaryotic and eukaryotic cell. Students are able to assess and discuss key issues regarding the basics of the structure and function of bacterial, plant and animal organisms. Students can demonstrate the basics of physiological and molecular processes occurring in living cells. Students are able to present the basic principles of DNA replication, transcription and protein synthesis. After completing the course, students have knowledge of basic concepts of biology, including the base structure and function of groups of organisms, their systematics, ecology, evolutionary processes and genetic basis of life. Key messages are developed and updated with the latest knowledge on the major issues of biology.	[SW1] Assessment of factual knowledge

Subject contents	Cell as the basic unit of life; model organisms. Molecules in cells: proteins, polysaccharides, phospholipids, DNA, RNA. Basic structure and function of prokaryotic cells. Bacteria and archaea. Basic structure and function of eukaryotic cells. Fundamentals of species taxonomy, the concept of species. Systematics of prokaryotes. Systematics of eukaryotes. Protista. Fungi. Lichens. Viruses. Plants - a variety of forms, tissues, organs, systems of organs. Plants important in biotechnology (fungi, lichens, vascular plants). Animals - a variety of forms, tissues, organs, systems of organs. Structure and function of proteins. DNA and chromosomes. Basics of DNA replication. Basics of recombinant DNA. Basics of gene expression: transcription, translation, control of gene expression. Cell division - mitosis and cell cycle. Meiosis. Characteristics of basic metabolic processes. Evolutionary processes. Ecology - terrestrial and aquatic biosystems.
Prerequisites and co-requisites	

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written test	60.0%	100.0%

Recommended reading

Basic literature	Podstawy biologii komórki. B. Alberts, D. Bray, K. Hopkin, A. Johnson, J. Lewis, M. Raff, K. Roberts, P. Walter. PWN 2009.
Supplementary literature	Campbell Biology. J.B. Reece, L.A. Urry, M.L. Cain, S.A. Wasserman, P.V. Minorsky, R.B. Jackson. 9th edition 2010. Biological Science. S. Freeman. 4th Edition 2010. recent review articles in scientific journals on basic biology
eResources addresses	Uzupełniające http://www.nature.com/ - link to Nature http://www.sciencemag.org/ - link to Science

Example issues/ example questions/ tasks being completed	Basics concepts in DNA replication, transcriptional regulation and protein synthesis. What are the differences and similarities between the prokaryotic and eukaryotic cell? Please describe the transcription process. What are the differences between lytic and lysogenic cycles in viruses?
Work placement	Not applicable