University of Gdańsk

Subject card

Subject name and code	Origin and evolution of life on Earth, PG_00132875		
Field of study	Criminology		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
Education level	Bachelor's studies	Subject group	
Mode of study	full-time studies	Mode of delivery	e-learning
Year of study	1	Language of instruction	Polish Polish
Semester of study	1	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Faculty of Chemistry -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Piotr Mucha, prof. UG	
	Teachers	dr hab. Piotr Mucha, prof. UG	

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: 30.0						

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	0.0	20.0	50

Subject objectives	
	to familiarize students with the theories of the origin of the Universe, the Milky Way, the Solar System and the Earth; to familiarize students with the origin and characteristics of matter; to acquaint students with non-biological (abiotic) methods of synthesizing organic compounds in nature; to acquaint students with the definitions and characteristics of the phenomenon of life; to acquaint students with the hypotheses of the origin of life on Earth; to acquaint students with the role of RNA in the origin of life on Earth; to familiarize students with the evolution of life on Earth

Learning outcomes

Course outcome	Subject outcome	Method of verification
	Student: - lists the basic laws and theories of science governing the universe - describes the methods of formation and properties of chemical elements - explains the relationships between the structure of matter and its observed properties - critically analyzes available experimental data on the origin and evolution of life - presents basic facts about the origin and evolution of life in an accessible manner, using scientific language typical of the exact sciences - is able to learn independently - reads and understands scientific and popular science texts in Polish and English	[SK4] test/exam - oral or written

Subject contents

Stages of origin, evolution and structure of the Universe, Milky Way, Solar System and Earth, formation of chemical elements, abiotic synthesis of organic compounds, definitions and characteristics of the phenomenon of life, role of RNA in the origin of life, world of RNA, catalytic RNA (ribozymes), world of DNA and proteins, properties of the genetic code, structure of prokaryotic and eukaryotic cell, evolution of life on Earth, oldest traces of life

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
single-choice test questions	50.0%	100.0%

Recommended reading

Basic literature	R.F. Gesteland, "The RNA World," Cold Spring Harbor Laboratory Press, 2005, M. Yarus, "Life from an RNA World: The Ancestor Within," Harvard Univ. Press, 2011. S. Hawking A Brief History of Time, Zysk and S-ka Publishers, 2007Davies P. Cosmic Winning, Wyd. Prószyński i S-ka, 2008
Supplementary literature	Clancy P., In Search of Life, Proszynski & S-ka Publishers, 2008
eResources addresses	

Example issues/ example questions/ tasks being completed	Sample test question:The current age of the Universe is estimated to be about (billion years).a. 4-5.5b. 8-10.5c. 13.7-13.8d. 19-20.1
Work placement	Not applicable

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