

Subject card

Subject name and code	Astronomy, PG_00138143						
Field of study	Archaeology						
Date of commencement of studies	October 2024	Academic year of realisation of subject				2024/2025	
Education level	undergraduate studies	Subject group					
Mode of study	full-time studies	Mode of delivery				at the university	
Year of study	1	Language of instruction				Polish	
Semester of study	2	ECTS credits				2.0	
Learning profile	academic	Assessment form					
Conducting unit	Zakład Spektroskopii Atomowo-Molekularnej i Astrofizyki -> Instytut Fizyki Teoretycznej i Astrofizyki -> Faculty of Mathematics, Physics and Informatics -> Rektor						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Piotr Gnaciński				
	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		2.0		18.0	50
Subject objectives	<p>Students will learn the ways we obtain information about astronomical objects.</p> <p>Students will learn about astronomical objects and the laws of physics responsible for their formation.</p> <p>Students will learn about astronomical phenomena.</p>						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
			<p>The student should know various astronomical objects, their structure and methods of research. The student should be able to explain the physical mechanisms arising in various astronomical objects.</p> <p>The student should be able to correct pseudoscientific statements regarding astronomy.</p>			[SK4] test/exam - oral or written	

Subject contents	<p>The history of astronomy in the context of the development of natural sciences. Movement of celestial bodies in the sky, time calculation - calendar. Astronomical observations in the optical, radio and gamma ray range. The impact of Earth's atmosphere on astronomical observations. Structure of the Earth and the atmosphere; ozone hole, ionosphere, aurora borealis, greenhouse effect. Rotational and circular motion of Earth. Earth-Moon system: lunar orbit, sidereal, synodic and draconian months, solar and lunar eclipses, tides. Overview of the physical properties of planets, moons and minor bodies in the Solar System; gravitational resonance; other planetary systems. Parameters and structure of the Sun. Solar activity and its impact on Earth. The neutrino problem. Brightness, temperature, radii and mass of stars. The Hertzsprung-Russell (H-R) diagram. Multiple and variable stars. Stellar clusters and associations. Interstellar matter: emission, reflection and dark nebulae. Evolution of stars on the H-R diagram. Late stages of the evolution of massive stars: supernovae, neutron stars, black holes. Structure of our Galaxy: spiral structure, rotation. Distribution of interstellar matter in the Galaxy. Other galaxies: classification and physical characteristics, determination of distances, active galactic nuclei and galaxy clusters. Elements of cosmology: Hubble's law, basic cosmological models, cosmic microwave background radiation, primordial nucleosynthesis, evolution of the Universe.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
Recommended reading	Multiple choice test	51.0%	100.0%
Basic literature	J. Kreiner, <i>Astronomia z Astrofizyką</i>		
Supplementary literature	brak		
eResources addresses	Adresy na platformie eNauczanie:		
Example issues/ example questions/ tasks being completed	-		
Work placement	Not applicable		

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