University of Gdańsk

Subject card

Subject name and code	Astronomy, PG_00138143		
Field of study	History		
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	at the university
Year of study	1	Language of instruction	Polish Polish
Semester of study	2	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Division of Atomic and Molecular Spectroscopy and Astrophysics -> Institute of Theoretical Physics and Astrophysics -> Faculty of Mathematics, Physics and Informatics -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Piotr Gnaciński	
	Teachers	dr hab. Piotr Gnaciński	

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	0.0	20.0	50

Subject objectives

Students will learn the ways we obtain information about astronomical objects.

Students will learn about astronomical objects and the laws of physics responsible for their formation.

Students will learn about astronomical phenomena.

Learning outcomes

Course outcome	Subject outcome	Method of verification
	The student knows astronomical objects and understands the occuring phenomena.	[SK4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Multiple choice test</td><td>51.0%</td><td>100.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>J. Kreiner, Astronomia z Astrofizyką</td></tr>
<tr><td>Supplementary literature</td><td>brak</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>-</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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