Level: bachelor

Course title: General Astronomy

Status: obligatory

ECTS: 9

Requirements: none

Learning objectives

Introducing students to the origin, distribution and contents of astronomical science. Special emphasis is on the understanding of astronomical concepts associated with the orientation of the sky, apparent motion of the sky and celestial bodies, measuring the time and detecting astronomical events and objects and scientific explanation of the physical processes that cause them.

Learning outcomes

Minimum: Understanding and active acquisition of concepts regarding the orientation in the sky, its movement and time measurement. Understanding the celestial phenomena and explanation of the structure of the celestial bodies. Adopting a physical explanation of the process in the Universe and the origin and evolution of the Universe.

Desired: The successful student will be able to perform and understand mathematical explanations of astronomical phenomena, explain to himself and to others structures, creation and development of the Universe.

Syllabus

Theoretical instruction

The subject of astronomy and its classification. A brief description of the development of astronomy. The celestial sphere and orientation in the sky. Constellations. Systems of celestial coordinates. Spherical triangle, the basic formulas of spherical trigonometry and their application in astronomy. Refraction, parallax, sunrises and sunsets. Basic astronomical instruments. Measuring the time, true and mean solar time, stellar time, atomic time. Calendar. Movement of the Sun, and its consequences. The movement of the Earth and the Moon. Solar and lunar eclipses. Apparent and actual motion of the planets. The law of gravity and its consequences. Proper motions of stars. Determining the distances to celestial objects. Unit distances in astronomy. Fundamentals of Astrophysics. The structure of the Sun. Solar System. Stars. Our galaxy. Extragalactic Astronomy. The origin and evolution of celestial bodies, fundamentals of cosmology.

Practical instruction

Calculation exercises, practical demonstration exercises, other forms of teaching, student research work.

Weekly teaching load				Other:
Lectures: 3	Exercises: 3	Other forms of teaching: 0	Student research:	