

Course code	Course group	Volume in ECTS credits	Course valid from	Course valid to	Reg. No.
FIZN0201	B	4			
<b>Course type (compulsory or optional)</b>				<b>optional</b>	
<b>Course level (study cycle)</b>				<b>I cycle</b>	
<b>Semester the course is delivered</b>				<b>Autumn and Spring</b>	
<b>Study form (face-to-face or distant)</b>				<b>face-to-face</b>	

**Course title in Lithuanian**

**Astronomija**

**Course title in English**

**Astronomy**

**Short course annotation in Lithuanian (up to 500 characters)**

Kursas skirtas supažindinti studentus su Visatos savybėmis, šiuolaikiniais jos tyrimais ir istorija bei evoliucijos prognozėmis. Kursas apima tokias temas: Arčiausi Visatos objektai - Žemė, Saulė ir Mėnulis. Saulės sistema - planetos, asteroidai ir kometos. Saulės sistema - nuolatinis judėjimas. Saulės sistema - atsiradimas ir likimas. Kosminės kelionės. Ką senovės išminčiai žinojo apie kosmosą ir kaip tos žinios buvo sukauptos? Šviesa, materija ir energija. Žvaigždės. Žvaigždžių evoliucijos dėsniumai. Paukščių Takas ir kitos galaktikos. Stambioji Visatos struktūra.

**Short course annotation in English (up to 500 characters)**

The course is devoted for introductory studies of Sun system, stars, galaxies, and entire Universe. The content of lectures includes: The Earth, the Sun, and the Moon. The structure and the origin of the Sun system. The process of scientific discovery and astronomy. The light, the matter and the energy. Observing the stars. Characteristics and evolution of the stars. The Milky Way galaxy. Galaxies. The structure and evolution of Universe.

**Prerequisites for entering the course**

None

**Course aim**

The course is devoted for introductory studies of Sun system, stars, galaxies, and entire Universe.

**Links between course outcomes, criteria of learning achievement evaluation and content**

Course outcomes	Criteria of learning achievement evaluation	Content (topics)
1. To understand the basic concepts of astronomy and describe the role of astronomy from the historical point of view.	Understood the basic concepts of astronomy.	The process of scientific discovery and astronomy.
2. To describe the patterns of formation, structure and evolution of Solar system and Earth.	Known the patterns of formation, structure and evolution of Solar system and Earth.	The Earth, the Sun, and the Moon. The structure and the origin of the Sun system.
3. To understand the ways the Universe is explored using modern observation methods and theories of matter structure.	Known the ways the Universe is explored using modern observation methods and theories of matter structure.	The light, the matter and the energy.
4. To explain the properties of stars, star formation and evolution patterns.	Defined the properties of stars, star formation and evolution patterns.	Observing the stars. Characteristics and evolution of the stars.
5. To describe the structure of Milky Way, the patterns of its evolution and the ways of exploration of distance galaxies	Known the structure of Milky Way, the patterns of its evolution and the ways of exploration of distance galaxies.	The Milky Way galaxy. Galaxies.
6. To explain the structure of the Universe based on the theory of its origin and evolution, where the life is the one of the results.	Defined the structure of the Universe, main patterns of its origin and evolution, which results the rise of life.	The structure and evolution of the Universe. The Big Bang scenario. Life as the product of the Universe.

**Study (teaching and learning) methods****Teaching activities:** lectures, discussions, tutorials, consulting.**Learning activities:** case analysis, discussions, preparation of home work**Methods of learning achievement assessment**

Mid-term exam, Homework and Final exam.

**Distribution of workload for students (contact and independent work in hours)**

Lectures	30
Group work	15
Practical work	30
Individual students work	32
Total:	107

**Structure of cumulative score and value of its constituent parts**

Mid-term exam – 25 %, Homework – 25 %, Final exam – 50 %.

**Recommended reference materials**

No.	Publication year	Authors of publication and title	Publishing house	Number of copies in		
				University library	Self-study rooms	Other libraries
<i>Basic materials</i>						
1.	2010	Eric Chaisson and Steve McMillan, Astronomy: A Beginner's Guide to the Universe.	USA, <u>Benjamin-Cummings Publishing Company.</u>	online		
2.	2004	Phillip Flower, A dictionary of astronomy	USA, West Publishing Company.	1		
3.	2005	Stephen Hawking, Leonard Mlodinow, <b>A Briefer History of Time.</b>	Bantam Dell	4		
<i>Supplementary materials</i>						
	2005	G. Kamuntavičius <b>Visata ir žmogus</b> (in Lithuanian).	Kaunas, VDU.			
	2013	A. Kanapickas, Lecture notes.	VMU Moodle			
1.	1997	Henbest, Nigel, The new astronomy	Harper Collins Publishers Ltd.			

**Course programme designed by**

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