

<b>Study programmes:</b> Astroinformatics – Bachelor studies				
<b>Course name:</b> Introduction to Astrobiology				
<b>Lecturers:</b> Anđelka Kovačević				
<b>Status:</b> Optional				
<b>ECTS:</b> 5				
<b>Attendance prerequisites:</b> None				
<b>Course aims:</b> Acquiring multidisciplinary knowledge in astronomy, chemistry, biology, geology and technology.				
<b>Course outcome:</b> Upon completion of the course, the student is well trained for multidisciplinary research.				
<b>Course content:</b> Information and entropy. Holographic principle. Universe as an information system. Comparison of astronomical and biological scale. Five Revolutions: Copernicus Revolution, Chemical Revolution, Geological Revolution, Biological Revolution, Cosmological Revolution. The geological and atmospheric properties of our planet. What is life? Cell. Genetic information systems. Information as the central concept of living organisms. Genetic code and its relation to other codes. Communication of living organisms. The Origin of Life on Earth. Cosmic bombardment and extinction. Extreme forms of life. Life and the Solar System. Mars. Jupiter's Satellites. Extrasolar planets: detection and censorship. Intelligent life in the Universe. Drake's equation. Kardashev scale. SETI. Fermi paradox.				
<b>Literature:</b> <ol style="list-style-type: none"> <li>1. Anđelka Kovačević: Astrobiologija</li> <li>2. Seth Lloyd, Programming the Universe, Alfred Knopf, New York, 2006</li> <li>3. Translated book of Robert Green: Astronomija, klasika u novom ruhu, Vesta, Beograd, 1998</li> <li>4. Vlatko Vedral: Decoding reality, Oxford University press, 2010</li> </ol> Interactive lab exercise <ul style="list-style-type: none"> <li>- Extrasolar planet plotter</li> <li>- GoogleEarth, GoogleMars</li> <li>- ImpactEarth simulator</li> </ul>				
<b>Number of hours:</b> 2 + 2	<b>Lecures:</b> 2	<b>Tutorials:</b> 2	<b>Laboratory:</b> -	<b>Research:</b> -
<b>Teaching and learning methods:</b> Frontal / Group / Practical				
<b>Assessment (maximal 100 points)</b>				
<b>Course assignments</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>	
Lectures	4	Written exam	-	
Exercises / Tutorials	-	Oral exam	-	
Colloquia	32	Written-oral exam	60	
Essay / Project	40			