

Study programs: Bachelor studies – Astronomy and astrophysics				
Course name: Stellar systems dynamics				
Lecturers: Stevo Šegan				
Status: Elective				
ECTS: 5				
Attendance prerequisites: No prerequisites				
Course aims: Study of higher stellar dynamical formations				
Course outcome: Understanding of basic principles of the galactic astronomy.				
Course content: Structure of the galaxy. History of the problem. First models and theorems. Star catalogs. Luminosity function. Star clusters. Analytical and dynamical methods for determination of the density of the objects in the system. Star associations and complexes. Absorption of the light in interstellar medium and methods for its determination. Functions and gradients of stellar densities. Mass of the Galaxy. Populations. Structure: spiral - branches, central – core. Studying galaxies: classification, evolution and morphology. Distances. Dimensions. Radial velocities and rotation. Mass. Galaxy population and clusters. Apparent distribution of the galaxies. Metagalaxy. Dynamics of the star systems. Introduction. stellar system. Relaxation time. Regular processes – evolution. Irregular processes – decay. Basic equations without collision. Stability of the stellar systems. Masses of the stellar systems.				
Literature: 1. Carroll, Bradley W. An introduction to modern astrophysics Addison- Wesley, 1996. 2. George W. Collins, II: The Fundamentals of Stellar Astrophysics, 2003				
Number of hours: 4	Lecures: 2	Tutorials: 2	Laboratory: -	Research: -
Teaching and learning methods: Frontal, Group, Lectures, Exercises				
Assessment (maximal 100 points)				
Course assignments	points	Final exam	points	
Lectures	15	Written exam	15	
Exercises / Tutorials	15	Oral exam	35	
Colloquia	-	Written-oral exam		
Essay / Project	20			