Study programmes: Astronomy and Astrophysics - PhD studies	
Course name: Special methods for data reduction	
Lecturers: Dušan Marčeta, Anđelka Kovačević, Milica Vučetić	
Status: Optional	
ECTS: 9	
Attendance prerequisites: None	
Course aims: Obtaining advanced and specific knowledge of the modern methods for processing of astronomical data	
Course outcome: After completing the course, student has advanced knowledge in the field of data processing and is capable to do independent scientific research.	
Course content: Schema of general classification of reduction of observational data and methods for their solving with mathematical basics; Numerical methods; Statistical methods; Semi analytical methods; Regression and correlation; Analysis of time series; Dispersion analysis; Covariant analysis; Models of topological regression; Rank correlation; Tables of conjugations; Numerical taxonomy and cluster analysis; Limitations in astronomical practice; Uniform generators of random numbers; Noise generators.	

Literature:
1. S.A. Aivazyan et al., Applied Statistics - study of relationships, 1985;
2. I. A. Fransis, A survey of statistical Software, 1983;
3. U. Grenander and M. Rosenblatt, Statistical analysis of stationary time series, 1966; Trumpler and Weaver, Statistical Astronomy, 1953.
4. Д. Ђуровић: Математичка обрада астрономских посматрања(1974); С. Шеган: Сет од 15 лекција из Специјаних метода

Number of hours: **10**	Lectures: **4**	Tutorials: **6**

Teaching and learning methods:
Frontal, group, practical work

Assessment (maximal 100 points)			
Course assignments	**points**	**Final exam**	**points**
Lectures	20	Written exam	-
Exercises / Tutorials	30	Oral exam	20
Colloquia	-	Written-oral exam	-
Essay / Project	30		