Study programmes: Bachelor studies – Mathematics	
Course name: CODE – Mathematical statistics	
Lecturers: Marko Obradović, Bojana Milošević	
Status: Compulsory	
ECTS: 10	
Attendance prerequisites: Introduction to statistics	
Course aims: Learning methods of estimation and testing in mathematical statistics.	
Course outcome: Upon completing the course, a student has basic knowledge in mathematical statistics and is capable of application of the inferential procedures to real data.	

Course content:
Exact and asymptotic sampling distribution. Empirical distribution function. Sufficiency and completeness. Exponential family. Point estimation. Rao-Blackwell theorem. Rao-Cramer inequality. MLE method. Method of moments. Least squares method. Testing hypothesis. Neyman-Pearson lemma. Uniformly most powerful tests. Unbiased tests. Likelihood ratio test. Statistical quality control. Nonparametric tests. Goodness-of-fit tests. Rank tests. Independence and randomness tests.

Literature:
1. R.V. Hogg, J.W. McKean, A.T. Craig, *Introduction to Mathematical Statistics*, Pearson Education, N. Jersey, 2005
2. R.J. Larsen, M.L. Marx, *An Introduction to Mathematical Statistics and Its Applications*, Pearson Education, N. Jersey, 2006
3. S. Stojanović, *Matematička statistika,* Naučna knjiga, Beograd, 1980
4. Љ. Петровић: *Теоријска статистика, теорија статистичког закључивања*, Економски факултет, Београд 2006.

Number of hours: 8	Lectures: 4	Tutorials: 4	Laboratory: –	Research: –

Teaching and learning methods: Frontal / Tutorial

Assessment (maximal 100 points)			
Course assignments	**points**	**Final exam**	**points**
Lectures	-	Written exam	-
Exercises / Tutorials	10	Oral exam	40
Colloquia	40	Written-oral exam	
Essay / Project	10		