Study programmes: Bachelor studies – Mathematics

Course name: Linear statistical models

Lecturers: Marko Obradović, Bojana Milošević

Status: Optional

ECTS: 5

Attendance prerequisites: Mathematical Statistics

Course aims: Learning linear statistical inference and applications.

Course outcome: Upon completing the course, a student is qualified for applying linear and related regression models.

Course content:

Matrices and determinants in mathematical statistics and stochastic processes. Generalized inverse matrix. Quadratic forms. Least squares method. Variance and covariance of the least squares estimators. Inference in least squares estimation. Prediction intervals. Statistical quality control. Linear estimation in stochastic processes. Hilbert space of square integrable random variables. Interpolation, extrapolation and filtration.

Literature:

1. C.P. Рао: *Линейные статистические методы и их применения*, Наука, Москва, 1968.
2. R.J. Larsen, M.L. Marx, *An Introduction to Mathematical Statistics and Its Applications*, Pearson Education, N. Jersey, 2006

Number of hours: 5	**Lectures: 3**	**Tutorials: 2**	**Laboratory: -**	**Research: -**

Teaching and learning methods: Tutorials / Lectures / Exercises

Assessment (maximal 100 points)

Course assignments	**points**	**Final exam**	**points**
Lectures	10	Written exam	50
Exercises / Tutorials	-	Oral exam	20
Colloquia	10	Written-oral exam	
Essay / Project	10		