Study programmes: Bachelor studies – Mathematics

Course name: Time series and application in finance

Lecturers: Jelena M. Jocković

Status: Compulsory for the module Statistics, actuarial and financial mathematics

ECTS: 6

Attendance prerequisites: Stochastic processes

Course aims: Acquiring general and specific knowledge in the field of time series analysis.

Course outcome: Upon completion of the course, student has basic knowledge about time series classification and methods of their study.

Course content:

Models of time series. Randomness testing. Deterministic components. ARMA models. Estimation of parameters. Forecasting time series. Partial autocorrelation. ARIMA models. Model identification. Time series in finance.

Literature:

1. J. Mališić, *Vremenske serije*, Matematički fakultet, Beograd, 2002
2. W.A. Fuller, *Introduction to Statistical Time Series,* John Wiley, New York, 1976
3. C. Chatfield, *The Analysis of Time Series – An Introduction*, Chapman and Hall, USA, 2004
4. J. Mališić, V. Jevremović, *Slučajni procesi i vremenske serije,* Matematički fakultet, Beograd, 2008

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

Teaching and learning methods: Frontal / Lectures / Exercises

Assessment (maximal 100 points)

Course assignments	**points**	**Final exam**	**points**
Lectures	-	Written exam	-
Exercises / Tutorials	20	Oral exam	-
Colloquia		Written-oral exam	40
Essay / Project	40		