Table 5.2. Course specification

Study program : Advanced Data Analytics in Business			
Course title: Time Series			
Teachers: Boris Radovanov, Dragan Stojić, Schluter Stephan			
Status of the course: Obligatory			
Number of ECTS: 7			
Condition: No			
Goal of the course The goal of the course is to illustrate time series analysis using many applications in fields of economics and finance, but also in other fields of science.			
Learning outcome Students will be given fundamental grounding in the application of such widely used tools in modelling time series. The models passes through the phases of indentification, diagnostics and forecasting. By the end of this course, students will be familiar with the implementation of time series models using adequate statistical software along with the interpretation for results derived from model implementation.			
Content of the course *Theoretical part* 1-3. Time series introduction 4. Univariate models 5-6. ARMA models 7-8. ARIMA models 9-10. GARCH models 11-12. VAR models 13. Visualisation 14-15. Forecasting using selected models. *Practical part* Implementation of time series models using statistical software through work on the case studies in selected fields.			
Literature 1. Chatfield, C. (2003). The Analysis of Time Series: An Introduction. Sixth Edition. Chapman and Hall/CRC 2. Tsay, R. (2002). Analysis of Financial Time Series. John Wiley & Sons, Inc. 3. Cowpertwait, P. & Metcalfe, A. (2009). Intoduction Time Series with R. Springer Science. **4.** Shumway, R. & Stoffer, D. (2011). Time Series Analysis and Its Application: with R Examples. Third Edition,			
Number of hours of active teaching	**Theoretical teaching: 2**	**Practical teaching: 3**	
Teaching methods All lectures are conducted in computer lab using appropriate software packages.			
Assessment (maximum number of points 100)			
Pre-exam obligations	Points	**Final exam**	Points
Activities during semester	**5**	Written exam	**15**
Practical part	**5**	Oral exam	**15**
Colloquium	**40**	.....	
Seminar paper	**20**		