

**Table 5.2.** Course specification

<b>Study program : Advanced Data Analytics in Business</b>			
<b>Course title: Supply chain &amp; Operational Analytics</b>			
<b>Teachers: Nebojša Gvozdenović, Dejan Brčanov, Loukas Tsironis</b>			
<b>Status of the course: Elective</b>			
<b>Number of ECTS: 7</b>			
<b>Condition: No</b>			
<b>Goal of the course</b>			
Goal of the course is a mastery of the essential elements of the supply chain analytics: Data management - collection, cleaning, manipulation, visualisation; Segmentation - products, suppliers and customers; Forecasting - techniques, aggregation, Demand management – process metrics, price optimization.			
<b>Learning outcome</b>			
Student knows to explain the importance of supply analytics, efficiently handles the available business information/data, can use analytical tools like Python, R, SPSS and MS excel efficiently in order to take managerial decisions more effectively.			
<b>Content of the course</b>			
<i>Theoretical part</i>			
<i>Week 1: Introduction to supply chain.</i>			
<i>Week 2: Supply chain Flows.</i>			
<i>Week 3: Data produced by supply chains.</i>			
<i>Week 4: Data cleaning and Manipulation.</i>			
<i>Week 5: Statistical analysis.</i>			
<i>Week 6: Data Visualization.</i>			
<i>Week 7: Product segmentations single and Multi-criteria.</i>			
<i>Week 8: Supplier segmentations and customer's segmentations.</i>			
<i>Week 9: Forecasting - techniques, accuracy testing, aggregation approaches.</i>			
<i>Week 10: Pricing and Markdowns optimization Techniques.</i>			
<i>Week 11: Inventory Policy and Safety stock Calculations</i>			
<i>Week 12: Inventory simulations.</i>			
<i>Week 13: Machine Learning for supply-chain.</i>			
<i>Week 14: Product Recommendations for customers.</i>			
<i>Week 15: Simulations for optimizing Capacity and Resources.</i>			
<i>Practical part</i>			
<i>Application of Supply Chain Models.</i>			
<b>Literature</b>			
1. Albright, C. & Winston, W. (2015). Business analytics: data analysis and decision making - 5th edition. Stamford, CT, USA.			
2. Chopra, S. & Meindl, P. (2013). Supply chain management: Strategy, planning and Operation - 5th Edition. Pearson Education, New Jersey, USA.			
3. Hyndman, R.J., & Athanasopoulos, G. (2018) Forecasting: principles and practice, 2nd edition, OTexts: Melbourne, Australia. OTexts.com/fpp2. Access date 13.05.2019.			
4. James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). An introduction to statistical learning: with application in R, New York: Springer			
<b>Number of hours of active teaching</b>	<b>Theoretical teaching: 2</b>	<b>Practical teaching: 2</b>	
<b>Teaching methods</b>			
Lectures, discussions, paper writing on teaching subjects.			
<b>Assessment (maximum number of points 100)</b>			
<b>Pre-exam obligations</b>	Points	<b>Final exam</b>	Points
Activities during semester	<b>5</b>	Written exam	<b>15</b>
Practical part	<b>5</b>	Oral exam	<b>15</b>
Colloquium	<b>20</b>	.....	
Seminar paper	<b>40</b>		