**Table 5.2.** Course specification

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| **Study program : Advanced Data Analytics in Business** | | | | |
| **Course title: Supply chain & Operational Analytics** | | | | |
| **Teachers: Nebojša Gvozdenović, Dejan Brcanov, Loukas Tsironis** | | | | |
| **Status of the course: Elective** | | | | |
| **Number of ECTS: 7** | | | | |
| **Condition: No** | | | | |
| **Goal of the course**  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. | | | | |
| **Learning outcome**  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. | | | | |
| **Content of the course**  *Theoretical part*  *Week 1: Introduction to supply chain.*  *Week 2: Supply chain Flows.*  *Week 3: Data produced by supply chains.*  *Week 4: Data cleaning and Manipulation.*  *Week 5: Statistical analysis.*  *Week 6: Data Visualization.*  *Week 7: Product segmentations single and Multi-criteria.*  *Week 8: Supplier segmentations and customer’s segmentations.*  *Week 9: Forecasting - techniques, accuracy testing, aggregation approaches.*  *Week 10: Pricing and Markdowns optimization Techniques.*  *Week 11: Inventory Policy and Safety stock Calculations*  *Week 12: Inventory simulations.*  *Week 13: Machine Learning for supply-chain.*  *Week 14: Product Recommendations for customers.*  *Week 15: Simulations for optimizing Capacity and Resources.*  *Practical part*  *Application of Supply Chain Models.* | | | | |
| **Literature**   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 | | | | |
| **Number of hours of active teaching** | **Theoretical teaching: 2** | | **Practical teaching: 2** | |
| **Teaching methods**  Lectures, discussions, paper writing on teaching subjects. | | | | |
| **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 | **20** | *..........* | |  |
| Seminar paper | **40** |  | |  |