1. Subject name	**Innovative methods for the demand planning**					
2. Subject name in Hungarian	A kereslettervezés korszerű módszerei					
3. Code	**BMEKOALD003**	4. Evaluation type	exam grade	5. Credits	3	
6. Weekly contact hours	**3 (0) Lecture**	**0 (0) Practice**		**0 (0) Lab**		
7. Curriculum	**PhD Programme**	8. Role	**Specific course**			

9. Working hours for fulfilling the requirements of the subject					**90**
Contact hours	42	Preparation for seminars	7	Homework	30
Reading written materials	11	Midterm preparation	0	Exam preparation	0

10. Department	**Department of Material Handling and Logistics Systems**
11. Responsible lecturer	Dr. Bóna Krisztián
12. Lecturers	Dr. Bóna Krisztián
13. Prerequisites	**recommended: BMEKOALD001 - Operational Research in Logistics**

14. Description of lectures

Innovative techniques and approaches in the denamd planning. Segmentation of the demand planning process. Data mining, clearing and filtering. Aggregation methodes, the role of the baseline. New approach in the model identification. Model selection techniques. Multi-criteria optimization techniques in the parameterizing of the forecasting models. Disaggregation methodes, fine tuning of the forecasting models. Measurement problems in the demand planning, the forecast error and accuraccy. Application of artificial intelligence in the demand planning. Harmonizing of corporate planning tasks, the role of the S&OP process.

15. Description of practices

16. Description of labortory practices

17. Learning outcomes

A. Knowledge
  - Knowledge of the tasks and problems of the demand planning.
  - Knowledge of the mathematical modelling techniques.
  - Knowledge of the related optimum searching and statistical data mining tasks and solutions.
B. Skills
  - Able to study the demand planning tasks, taking into account the scientific requirements.
  - Able to carry out research and development tasks related to the demand planning.
C. Attitudes
  - Strive to maximize their abilities to make their studies at the highest possible level, with a profound and independent knowledge, accurate and error-free, in compliance with the rules of the applicable tools, in collaboration with the instructors.
D. Autonomy and Responsibility
  - Take responsibility for the quality of the work and the ethical standards that set an example for the classmates, using the knowledge acquired during the course

18. Requirements, way to determine a grade (obtain a signature)

The grade of the PhD student is based on the research activity, and the quality of the developed model, and the scientific white paper.

19. Opportunity for repeat/retake and delayed completion

Announced at the beginning of the semester

20. Learning materials

C. Chatfield: The Analysis of Time Series, Chapman & Hall/CRC, 2004
Armstrong, J. Scott (ed.): Principles of forecasting: a handbook for researchers and practitioners (in English). Norwell,

Massachusetts: Kluwer Academic Publishers. ISBN 0-7923-7930-6., 2001
Makridakis, Spyros; Wheelwright, Steven; Hyndman, Rob J.: Forecasting: methods and applications (in English). New York: John Wiley & Sons. ISBN 0-471-53233-9., 1998
http://www.neural-forecasting.com/

| Effective date | 27 November 2019 | This Subject Datasheet is valid for | Inactive courses |