



<b>1. Subject name</b>	<b>Innovative methods for the inventory planning</b>
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<b>2. Subject name in Hungarian</b>	A készlettervezés korszerű módszerei
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<b>3. Code</b>	<b>BMEKOALD008</b>	<b>4. Evaluation type</b>	<b>exam grade</b>	<b>5. Credits</b>	<b>3</b>
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<b>6. Weekly contact hours</b>	<b>3 (0) Lecture</b>	<b>0 (0) Practice</b>	<b>0 (0) Lab</b>
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<b>7. Curriculum</b>	<b>PhD Programme</b>	<b>8. Role</b>	<b>Specific course</b>
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<b>9. Working hours for fulfilling the requirements of the subject</b>	<b>90</b>
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<b>Contact hours</b>	42	<b>Preparation for seminars</b>	7	<b>Homework</b>	30
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<b>Reading written materials</b>	11	<b>Midterm preparation</b>	0	<b>Exam preparation</b>	0
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<b>10. Department</b>	<b>Department of Material Handling and Logistics Systems</b>
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<b>11. Responsible lecturer</b>	Dr. Bóna Krisztián
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<b>12. Lecturers</b>	Dr. Bóna Krisztián
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<b>13. Prerequisites</b>	<b>recommended: BMEKOALD001 - Operational Research in Logistics</b>
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<b>14. Description of lectures</b>
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Innovative techniques and approaches in the inventory planning. Purchasing order scheduling problems, and special issues of the inventory theory. Multi-criteria optimization problems in inventory processes. Inventory control. Simulation modelling of inventory processes, and its applications in the inventory control. Application of artificial intelligence in the inventory planning. The specialities of the inventory networks, inventory routing problems. Inventory planning in case of dependent demand, development directions of MRP systems. Inventory planning problems in case of reverse logistics networks. Harmonizing of corporate planning tasks, the role of the S&OP process.

<b>15. Description of practices</b>
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<b>16. Description of laboratory practices</b>
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<b>17. Learning outcomes</b>
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- A. Knowledge
- Knowledge of the tasks and problems of the inventory 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 inventory planning tasks, taking into account the scientific requirements.
  - Able to carry out research and development tasks related to the inventory 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.

<b>18. Requirements, way to determine a grade (obtain a signature)</b>
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The grade of the PhD student is based on the research activity, and the quality of the developed model, and the scientific white paper.

<b>19. Opportunity for repeat/retake and delayed completion</b>
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Announced at the beginning of the semester

<b>20. Learning materials</b>
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Waters, D.: Inventory Control and Management, John Wiley & Sons, 2007  
Axsäter, S.: Inventory Control, Springer, 2006

Bartmann, D., Beckmann, M. J.: Inventory control: models and methods, Springer, 1992  
Love, S. F.: Inventory control, McGraw-Hill, 1979

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