Course title: Theory of material flow systems	**Neptun code: GEALT407**
Course coordinator: name, position, scientific degree: **Prof. Tamás Bányai, PhD**	
type and number of lesson: **lecture**/seminar/practical lesson/consultation 2 / **week** or semester	
method of accountability: **colloquium**/practical mark/other	
curriculum location of the subject: **autumn**/spring	
pre-study conditions:	
The task and purpose of the subject:	
Introduction to the principles and methods of design of material flow systems. The students will be able to perform the basic design tasks of material flow systems solving basic design problems.	
Course description:	
Mathematical description of material flow. Facility location. Assignment of objects. Loading unit building. Methods of routing. Inventory optimization. Reliability assessment of material flow systems. Simulation of material flow systems. Control of material flow systems. Theoretical aspects of material flow management in cyber-physical environments.	
Required literature:	
1. Winston, W. L. Operations research – applications and algorithms, Duxbury Press, 1994	
Recommended literature:	
1. Simchi-Levi, D., Bramel, J. The logic of logistics – theory, algorithms, and applications for logistics and supply chain management, Springer, 1997	