Course title: Traceability Systems in Logistics	**Number of credits:** 5
Suggested semester: I./II. Semester	**Assessment:** Exam
Number of hours per semester Theoretical: 2	
Name and position of course coordinator: Dr. János Juhász, Ph.D., Assistant professor	
Lecturer(s): -	
Course description:	
Course objective: The course introduces the fundamental concepts, operating principles, tools and information technology background of identification and traceability systems. Students gain an overview of the internal and external components of logistics systems, their structure and operation, as well as the practical application of different identification technologies. During the course, students become familiar with the basic principles of the GS1 standards system, barcode and other optical identification systems, RFID technology, and spatial tracking solutions. The aim of the course is to provide students with comprehensive knowledge about identification and traceability technologies used in logistics systems, as well as their design and operation. **Course topics:** Structure and operation of internal and external logistics systems Basic concepts of identification and traceability systems Classification of identification technologies Barcode and optical identification systems RFID technology and its applications GS1 standards and global identification solutions The role of logistics information systems and databases Design and implementation of traceability systems Case studies of logistics identification systems	
Required and recommended literature:	
Required literature: 1.Ten Hompel, M., Büchter, H., Franzke, U.: Identifikationssysteme und Automatisierung; Springer Verlag, e-ISBN 978-3-540-75881-5, Berlin Heidelberg, 2008. 2. Juhász, J.: Impacts of logistics processes in standardization and traceability systems, *Advanced Logistic Systems - Theory and Practice*, 19(3), pp. 38–43, 2025. 3. GS1 Case studies *Recommended literature:* 1. Quinn, A. M., Eastman, J. M.: Optical Properties of Bar Code Symbols for Laser Scanning. High-speed inspection architectures, barcoding, and character recognition, 5 - 7. November 1990. Boston, ISBN: 0-8194-0451-9, Massachusetts, 1991. 2. Chonghua L., Qin H.: Design for the logistics storage management system based on RFID, 2009 3rd International Conference on Anti-counterfeiting, Security, and Identification in Communication, ASID 2009.	