1. Subject name	**Automation of logistics systems**				
2. Subject name in Hungarian	Logisztikai rendszerek automatizációja				
3. Code	**BMEKOALM325**	4. Evaluation type	exam grade	5. Credits	**5**
6. Weekly contact hours	**2 (10) Lecture**	**0 (0) Practice**	**2 (11) Lab**		
7. Curriculum	**Logistics Engineering MSc (L)**	8. Role	Specialization (sp) at Logistics Engineering MSc (L)		

9. Working hours for fulfilling the requirements of the subject					**150**
Contact hours	56	Preparation for seminars	18	Homework	40
Reading written materials	22	Midterm preparation	4	Exam preparation	10

10. Department	**Department of Material Handling and Logistics Systems**
11. Responsible lecturer	Dr. Bohács Gábor
12. Lecturers	Gáspár Dániel, Szabó Péter
13. Prerequisites	

14. Description of lectures

In the course, we will systemise the company's process control, SCADA and control systems. Among others operational conditions of PLC control systems (multiple controllers), possible solutions, and communication implementation. Getting to know the communication protocols and interfaces commonly used in industry. Within the course it is in automated systems, special attention is paid to discussing the application possibilities of sensors and actuators to include operational principles and features. In addition, the process of constructing and designing a process algorithm is discussed based on a known task. Finally, determining the possible connection points of the system elements (people, machines, identification, and quality control) completes the discussed fields.

15. Description of practices

16. Description of labortory practices

Demonstration of sensors, actuators in an automated demonstrational systems built in the laboratory of the department, recording of sensor characteristics under laboratory conditions. Testing network data communication methods and performing complex management tasks of automated demonstrational systems built in the laboratory of the department.

17. Learning outcomes

A. Knowledge
- Knowledge of system components in logistics systems control.
- Knowledge of system control architectures of logistics systems control.

B. Skills
- Ability to apply the above knowledge and related professional knowledge in the design of new equipment / components.

C. Attitudes
- Strives to provide with the best knowledge and skills to work with the instructors.

D. Autonomy and Responsibility
- In the use of the acquired knowledge the student carries out independent, responsible engineering work.

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

The end semester signature depends on the submission of the satisfactory home assignments, satisfactory midterm test and the acceptance of the lab records. The final grade is calculated as: 20% - midterm test, 15-15% of the homeworks and 50% of the written exam, which can be corrected orally by the students if necessary.

19. Opportunity for repeat/retake and delayed completion

The homeworks' final submission and the midterm test both can be resubmitted once.

20. Learning materials

Students can download the subject notes in pdf format via Moodle.

| **Effective date** | 10 October 2019 | **This Subject Datasheet is valid for** | Inactive courses |