Industrial informatics (ECTS 4)

Language: The course is offered in Serbian and Hungarian

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Course description:

The goal of the course is that students should be introduced to the equipment and functions of administrative computer systems, computer guarantee, monitoring, regulation and sequence management. Exercises include the following topics: programming method, application and programming of programmable logical controllers, interface for the visualisation of the process and SCADA systems on real cases, with analog and digital inputs and outputs.

The course would cover the following topics, both as lectures and exercises:

1. Fundamentals of the technological process

2. Information requirements of the automatic control system

3. Structure of computerized computer networks in management

4. Industrial computer networks

5. Information from management processes

6. Reliability and redundancy of control systems

7. Topology of the PLC device

8. Programming PLC devices according to IEC 61131-3 standard

9. Programming by Ladder diagram

10. Programming with the SFC diagram

11. Basic elements for system visualization

12. SCADA systems

13. Industrial communication protocols (ProfiBus, RS 485, RS 422)

14. Industrial communication protocols (Ethernet, EtherCAT, ProfiNet)

15. Repeat. Conclusion of the semester.

Aims:
The goals are the following: The students getting acquainted with the management functions of computer systems: computer graphics, communication, monitoring, control, regulation and sequential management. Mastering the programming of programmable controllers with digital and analog inputs and outputs.