**Applied Automation 2 (ECTS credits: 6)**

Language: the course is offered in English, Serbian and Hungarian.

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**Course description:**

Through the procession, students gradually get acquainted with the equipment and functions of computer surveillance systems, computer graphics, monitoring, regulation. Through exercises, they master the principle of designing and implementing SCADA and HMI systems. With the help of real elements, they master the communication possibilities of SCADA and HMI systems.

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

1. Design of SCADA and HMI systems.
2. Dimensioning and selection of elements in SCADA and HMI systems
3. Design of computer control systems
4. Introduction to the monitoring systems of the manufacturers OMRON and SIEMENS.
5. Realization of industrial communication.
6. SCADA systems based on WEB technology.
7. ETHERCAT, ProfiNET, IO-Link and ProfiBUS communication protocols.
8. Communication with sensors and actuators.
9. ERP and MES systems.

**Aims:**

* Visualization of the process using SCADA and HMI systems,
* Realization of communication between PLC and supervisory and control systems.