Course title: Process automation
Course code: 63737
ECTS: 6
Professor: Octavian-Mihai Machidon
Undergraduate program

Prerequisite knowledge:

- Basic programming skills (recommended). While not mandatory, knowledge of programming concepts will be advantageous, especially when working with programmable logic controllers (PLCs) and other automation software tools.

- Basic knowledge of communication protocols and computer networks (recommended). Understanding these concepts will help in grasping the communication aspects covered in the course.

Short course description:

In today's global economy, process automation plays an increasingly crucial role. Engineers strive to automate various devices and integrate them into complex computer systems to facilitate a wide range of activities for people.

In the Process Automation course, we will explore the fundamental components necessary for the implementation and management of automated systems. This includes an in-depth look at different sensors, actuators, and industrial computers. You will learn how to program these computers and connect them into reliable industrial networks. Additionally, the course covers the creation of user-friendly control systems and the integration of industrial computers with higher-level enterprise management systems. To ensure that the automation of devices is safe and error-free, we will prepare for real-world challenges in our computer lab using models of industrial robots and production lines. This hands-on approach allows students to gain practical experience and confidence in managing automated systems.

The course involves mandatory and graded practical exercises. A significant portion of the course grade is derived from a project developed during the semester. This project accounts for half of the final grade, while the other half is based on your performance in the final exam demonstrating your theoretical knowledge.

By the end of the course, students will have a comprehensive understanding of the principles and practices of process automation, equipped with the skills necessary to design, program, and manage automated systems in various industrial contexts.