**Intelligent Control Systems (ECTS credits: 5)**

Language: the course is offered in Serbian and Hungarian.

**Course description:**

The course covers soft computing fundamentals with emphasis on fuzzy logic and fuzzy logic controller. The themes to be covered are the following: Fundamentals of control systems, PID, fuzzy logic operators, Mamdani inference system, Sugeno inference system, usage of fuzzy logic in control systems, PID fuzzy, artificial neural network, back propagation algorithm, hybrid systems, genetic algorithms, ANFIS for control systems.

**Aims:**

* to help students to gain knowledge of soft computing
* to develop practical knowledge of system modeling
* to use intelligent control methods in technical systems

**Learning outcomes:**

After completing the course the student should be able to:

* use fuzzy logic to create a fuzzy inference system
* implement fuzzy inference system in control
* implement adaptive neuro-fuzzy inference systems

**Electrotechnics (ECTS credits: 6)**

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

**Course description:**

The course covers the following topics: basic terms, direct currents, alternating currents, Kirchhoff's current law and Kirchhoff's voltage law, Ohm's law, methods for solving electric networks, complex calculations, impedance, calculation of equivalent impedance, three-phase systems, resonant circuits.

**Aims:**

The goal of the course is to introduce students the elements of electric networks and basic methods for solving networks with direct or alternating currents.

Upon completion, the students should be able to understand how an electric network works and what the function of different elements is. The students should also be able to analyze and solve different electric networks.