**Embedded Systems (ECTS 6)**

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

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**Course description:**

The course includes a description of basic and dedicated computer architectures and the differences between them. A description of the structure of the system and its programming is given. Peripheral elements are listed as well as appropriate measuring instrumentation for measuring electrical and non-electrical quantities. The course also includes designing and assembling PCB boards.

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

1. Introduction to computer architecture
2. Digital Signal Processors
3. Assembly languages
4. Electronic elements
5. Voltage and current sources
6. Measurement tools
7. Measurement of electrical quantities
8. Measurement of non-electrical quantities
9. AD and DA converters
10. PCB Design
11. Soldering
12. Peripherals in embedded system
13. IrAD and USB peripheries
14. Networking
15. Closing remarks

**Aims:**

The goals are the following:

The ability to select and adapt peripherals to a given computer architecture. Ability of machine programming of the designed system. Understanding the working principles of peripheral elements for measuring physical quantities. Ability to connect the designed architecture with a more complex network system.