**Robotics (ECTS 5)**

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Language: The course is offered in Serbian and Hungarian

Course description:

The course covers topics related to industrial robots, mobile robots and robotic systems. Main topics include: types and structure of robots, forward and inverse kinematics, autonomous robots, sensors and actuators in robots. Exercises include calculations for forward kinematics based on Denavit–Hartenberg parameters, handling of real industrial robots and simulation of robotic systems.

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

1. Types and structure of robots
2. Kinematics and dynamics of robots
3. Forward and inverse kinematics
4. Denavit–Hartenberg parameters
5. Autonomous robots
6. Simulation of robots
7. 1. written examination
8. Sensors in robots
9. Actuators in robots
10. Control of robots
11. Image processing in robotics
12. Robot operating systems
13. Construction of robots
14. 2. written examination
15. Repeat. Conclusion of the semester

Aims:
The goals of the course are the following: introduce students to the types and structure of robots and robotic systems, working concepts of industrial and mobile robots, and handling of industrial robots.