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| Study program: Electrical and Computing Engineering – Module: Remote Control | | | | |
| Type and level of studies: Master studies (second level of studies) | | | | |
| Course unit: PLC Programming | | | | |
| Teacher in charge: Miroslav Bjekic | | | | |
| Language of instruction: English | | | | |
| ECTS: 6 | | | | |
| Prerequisites: - | | | | |
| Semester: Summer | | | | |
| Course unit objective | | | | |
| Students should acquire skills in programming and implementation of logical programmable controller (PLC) by standard EN 61131 | | | | |
| Learning outcomes of Course unit | | | | |
| After completion of the course students are qualified to program PLC programs according to EN 61131 and apply it to the specific PLC applications | | | | |
| Course unit contents | | | | |
| <i>Theoretical classes</i> | | | | |
| Introduction to PLC. The structure of the PLC. Types of variables. Programming organizational units (program, function blocks, functions). PLC programming: Ladder diagram, Functional Block Diagram, Structured Text, Instruction List, Sequential function chart, Continuous functional diagram. Debugging programs. Operator panel. Connecting PLCs. Creating projects with PLC. Documenting the project. PLC application. | | | | |
| <i>Practical classes</i> | | | | |
| Laboratory classes in which students program PLC and solve practical problems that they may meet in real industrial applications. | | | | |
| Literature | | | | |
| 1. PLC programming according to the IEC 61131-3 standard | | | | |
| 2. User Manual for PLC Programming with CoDeSys, 3S - Smart Software Solutions GmbH | | | | |
| Number of active teaching hours | | | | Other classes |
| Lectures: 2 | <i>Practice: 2</i> | <i>Other forms of classes:</i> Mentoring system | <i>Independent work:</i> Case study | |
| Teaching methods: consultations, practical work in the lab, independent work | | | | |
| Examination methods (maximum 100 points) | | | | |
| Exam prerequisites | No. of points: | Final exam | No. of points: | |
| Student's activity during lectures | 10 | oral examination | 30 | |
| Practical classes | 40 | written examination | 20 | |
| Seminars/homework | | | | |
| Project | | | | |
| Grading system | | | | |
| Grade | No. of points | Description | | |
| 10 | 91-100 | Excellent | | |
| 9 | 81-90 | Exceptionally good | | |
| 8 | 71-80 | Very good | | |
| 7 | 61-70 | Good | | |
| 6 | 51-60 | Passing | | |
| 5 | less than 50 | Failing | | |