



Discrete mathematics and logic (SE-024)
(DISKREETNE MATEMAATIKA JA LOOGIKA)

SUBJECT DESCRIPTION

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| Credits (ECTS) | 5.00 ECTS |
| Assessment | grading |
| Aim of the subject and short description | |
| Number systems. Binary hexadecimal system. Classical logics. Propositional calculus. Predicate calculus. Derivative systems. Mathematical logic. Mathematical induction. Undecidable problems. Non-completeness of arithmetic. Non-classical logic. Application of logic. Set theory. Basic operations of set theory and their properties. Set theory as analogue for mathematical logic. Basics of graph theory. Complexity. Combinatorics. Automata. | |
| Learning outcomes: | |
| Student: <ol style="list-style-type: none">1. Knows basic laws of mathematical logic and can apply them in formula manipulations2. Can represent functions of mathematical logic in standard form3. Knows algorithms of minimization of standard forms4. Can apply functions of mathematical logic in analysis of digital circuits5. Knows basic laws of set theory and can apply them in transformation of set theory expressions6. Is able to handle set theory as an analogue of mathematical logic7. Knows fundamental concepts of graph theory and can apply them in solving of basic tasks in the field of graph theory | |