<table>
<tr><td colspan="2">Name:
Discrete Mathematics and Linear Algebra I</td><td>NEPTUN-code:
NMXDM1EBNE</td><td>Number of periods/week:
full-time: 3 lec + 2 sem + 0 lab</td></tr>
<tr><td colspan="2">Credit: 6
Requirement: exam</td><td colspan="2">Prerequisite:
-</td></tr>
<tr><td>Responsible:
Magdolna SZŐKE, Ph.D.</td><td>Position:
senior lecturer</td><td colspan="2">Faculty and Institute name:
John von Neumann Faculty of Informatics
Institute of Applied Mathematics</td></tr>
<tr><td colspan="4">Way of assessment:
- signature requirements: at least 50% compliance of mid-term papers
- exam-mark: according to the result of the exam</td></tr>
<tr><td colspan="4">Competences</td></tr>
<tr><td colspan="4"></td></tr>
<tr><td colspan="4">Course descrition:</td></tr>
<tr><td colspan="4">Cartesian coordinate systems, vectors and vector operations, scalar and vector product, equations of straight lines and planes. Matrices and matrix operations, inverse matrix. Matrix representation of systems of linear equation. Methods for solving systems of linear equations.
Operations on sets. Power sets. Cartesian product.
Binary relation, inverse relation. Composition of relations. Partial functions and functions: 'onto', 'into' and 'one to one' functions. Cardinality.
Propositional calculus, operations. Disjunctive and conjunctive normal forms.
Logical arguments. Predicate logic. Rules for the quantifiers. Semantics. Interpretations. Model.</td></tr>
<tr><td colspan="4">Literature</td></tr>
<tr><td colspan="4">János Bagyinszki – Anna György: Discrete Mathematics for College Students, Typotex, Budapest, 2002 (in Hungarian)
Anna György – Péter Kárász– Szabolcs Sergyán – István Vajda – Ágnes Záborszky: Discrete Mathematics Examples, BMF-NIK-5003, Budapest, 2003 (in Hungarian)
György Baróti Dr., Miklós Kis, Edit Schmidt, Zsuzsanna Lukács Dr. Sréterné: Mathematical Tasks Collections, BMF KKVFK, 2000 (in Hungarian)</td></tr>
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