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| **1. Course title:** Discrete Mathematics 1 | | | | |
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| **2. Code:** | | **3. Type (lecture, practice etc.):** lecture + seminar | | |
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| **4. Contact hours:** 2+2 hoursper week | | **5. Number of credits (ECTS):** 5 | | |
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| 6. Preliminary conditions (max. 3): | | | | |
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| **7. Announced:** fall semester, spring semester, both | | | | |
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| **8. Limit for participants:** 150 | | | | |
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| **10. Responsible teacher (faculty, institute and department):**  Sándor Szabó (Faculty of Science, Institute of Mathematics and Informatics, Department of Applied Mathematics) | | | | |
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| 11. Teacher(s) and percentage: | | Sándor Szabó | | 100 % |
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| **12. Language:** English | | | | |
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| 13. Course objectives and/or learning outcomes:  Objectives: The aim of the course is to learn discrete structures, related algorithms, proof techniques in discrete mathematics.  Learning outcomes: students completing the course will familiar with the terminology, concepts and methods widely used in computer science | | | | |
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| 14. Course outline   1. Paradoxons in naiv set theory, Neumann universe 2. Relations, equivalence and partial ordering relations 3. Counting techiques 4. Binomial and polynomial theorems 5. Numbers, natural, integer, rational, real, complex 6. Naiv and formal concepts of graph 7. Trees, 8. Graph isomorhphism, 9. Eulerian, Hamiltonian graphs 10. Satisfiability problem, Davis-Putnam algorithm 11. Coloring the nodes of a graph 12. Maximal, maximum clique, k-clique problems 13. Selected applications | | | | |
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| **15. Mid-semester works**  Problem solving tests on the 6th and 13th week. | | | | |
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| **16. Course requirements and grading**  Based on regular homework assignments, presentations, the break down on marks is agreed on at the beginning of the course. | | | | |
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| 17. List of readings   1. Kenneth H. Rosen and Kamala Krithivasan: Discrete Mathematics and Its Applications, 7th ed., Mc Graw Hill 2007. | | | | |
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| **Date** | 13 April, 2017 | **Prepared by** |  | |
| Sándor Szabó  responsible teacher | |
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| **Endorsed by** | | |  | |
| XXX program supervisor | |