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| **1. Course title:** Computer Algebra | | | | | |
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| **2. Code:** | | **3. Type (lecture, practice etc.):** lecture | | | |
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| **4. Contact hours:** 2 hoursper week | | **5. Number of credits (ECTS):** 3 | | | |
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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:** | | | | | |
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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:** Learning the basic concepts terminology, methods of symbolic computations.  **Learning outcomes:** After completing the course the student will turn to computer algebra systems with more confidence. | | | | | |
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| **14. Course outline**   1. Various computations numerical and symbolic large scale reliable. 2. Integers arithmetic. 3. Floating point computations. 4. Interval arithmetic. 5. Hausdorf distance, elements of interval analysis. 6. Interval Newton method. 7. Polynomials, roots, substitution. 8. Factoring polynomials. 9. Computations in logic. 10. Computing with graphs. 11. Proofs in geometry. 12. Elements of formal concept analysis. 13. Applications | | | | | |
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| **15. Mid-semester works**  Attending lectures is highly recommended. | | | | | |
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| **16. Course requirements and grading**  Based on regular home work assignments, presentation, projects. | | | | | |
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| **17. List of readings**   1. Modern Coputer Algebra, Cambride University Press | | | | | |
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| **18. Recommended texts, further readings** | | | | | |
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| **Date** | 4 May, 2017 | **Prepared by** |  | | |
| Sándor Szabó  responsible teacher | | |
|  | | | | |
| **Endorsed by** | | |  | | |
| László Tóth  program supervisor | | |