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| 1. Course title: Geometry 2. lecture | | | | | |
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| 2. Code: | | 3. Type (lecture, practice etc.): lecture | | | |
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| 4. Contact hours: 2 hours per week | | 5. Number of credits (ECTS): 2 | | | |
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| 6. Preliminary conditions (max. 3):  Geometry 1. lec.+disc. | | | | | |
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| 7. Announced:fall semester, spring semester, both | | | | | |
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| 8. Limit for participants: 20 | | | | | |
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| 10. Responsible teacher (faculty, institute and department):  Ágota H. Temesvári | | | | | |
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| 11. Teacher(s) and percentage: | | János Ruff | | 100% | |
| Ágota H. Temesvári | | 100% | |
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| 12. Language:English | | | | | |
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| 13. Course objectives and/or learning outcomes:  Objectives: The main aim of the course is to introduce the theory of geometric transformations. | | | | | |
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| 14. Course outline  Week 1: Isometries of the line and the plane. Translations, rotations, glide reflections, connections. Invariant properties, fixed elements.  Week 2: Classification, product of transformations, isometries of the euclidean plane in the form of product of reflections.  Week 3: Spatial isometries, Invariant properties. Fixed elements.  Week 4: Classification, product of transformations, isometries of the euclidean 3-space in the form of product of reflections by planes. Subgroups of the isometry groups.  Week 5: Homothety, homotheties in the plane. Invariant properties. Fixed elements, classification.  Week 6: Homotheties in the 3-space. Group of homotheties, subgroups.  Week 7: Affine transformations. Invariant properties, classification. Affine groups, subgroups.  Week 8: Scalings. Properties.  Week 9: Planar scalings, applications for constructions.  Week 10: Parallel projections. Applications.  Week 11: Representations.  Week 12: Inversion.  Week 13: Inversion and applications. | | | | | |
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| 15. Mid-semester works  Attending lectures is highly recommended. | | | | | |
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| 16. Course requirements and grading  Written exam is based on lectures, accessible electronic sources and lecture materials.  Grades:  0–50% fail  51–65% acceptable  66–75% average  76–90% good  91–100% excellent | | | | | |
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| 17. List of readings  1. Coxeter, H.S.M., Introduction to geometry. 1969.  2. Hartshorne, Robin. Geometry: Euclid and beyond. Springer Science & Business Media, 2013.  3. Berger, M.: Geometry I., Springer Verlag, 1987. | | | | | |
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| 18. Recommended texts, further readings | | | | | |
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| **Date** | 13 April, 2017 | **Prepared by** | Ágota H. Temesvári | | |
| responsible teacher | | |
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| **Endorsed by** | | |  | | |
| László Tóth, PhD program supervisor | | |