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| 1. Course title: Geometry 1. 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): | | | | | |
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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 basic ideas of geometry. | | | | | |
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| 14. Course outline  Week 1: Mutual position of pointsets in the space. Angle, mesasuring angles. Polygons.  Week 2: Isometries in the plane and space. Congruent pointsets.  Week 3: Parallel lines and proportional segments. Homothety. Homothetic transformations.  Week 4: Elementary theorems for triangles and polygons.  Week 5: Elementary theorems for triangles and polygons.  Week 6: Euclidean constructions.  Week 7: Orthogonality, orthogonal projections.  Week 8: Distance of pointsets. Convexity, convex hull. Polyhedra, convex polyhedra, properties. Euler’s theorem.  Week 9: Regular polygons, classification and symmetries.  Week 10: Vectors, geometric properties, basis, coordinates. Operations, properties. Inner product, calculations.  Week 11: Cross product, triple (mixed) product, geometric interpretation. Properties, calculations.  Week 12: Equation of a plane, system of equations of a line. Equations of circles and spheres.  Week 13: Analytic geometry | | | | | |
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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 | | |