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| Study programme(s): Information Technologies | | | | |
| Level: Bachelor | | | | |
| Course title: Analytic Geometry | | | | |
| Lecturer: Dragan Mašulović, Maja Pech | | | | |
| Status: elective | | | | |
| ECTS: 6 | | | | |
| Requirements: Discrete Structures 2 | | | | |
| Learning objectives In this course students shall acquire deeper knowledge of analytic geometry that are vital to computer science and in particular to computer graphics. Students will be able to solve geometric problems in 2D and 3D using techniques of analytic geometry and will understand fundamental concepts of vector spaces. | | | | |
| Learning outcomes At the end of the course a successful student will be able to perform standard calculations in vector calculus, solve concrete geometric problems in 2D and 3D using strategies of analytic geometry, identify bases of vector spaces, compute the dimension of a vector space, understand and compute with linear and affine maps and compute matrix representation of linear and affine maps. | | | | |
| Syllabus <ul style="list-style-type: none"> • Vector calculus • Elements of analytic geometry in 2D and 3D • Vector spaces over a field • Basis, dimension, finitely dimensional vector spaces over a field • Linear maps, matrices • Affine maps, matrix representation | | | | |
| Literature B. Solomon: "Linear Algebra - Geometry and Transformation", CRC Press, Chapman and Hall, 2015 Y. Lin: "Geometric Linear Algebra", World Scientific, 2005 | | | | |
| Weekly teaching load | | | | |
| Lectures: 3 | Exercises : 1 | Practical Exercises: 0 | Student research: 0 | Other: 0 |
| Teaching methodology Blackboard lectures, Blackboard exercises | | | | |
| Grading method (maximal number of points 100) | | | | |
| Pre-exam obligations | points | Final exam | points | |
| <i>Colloquium 1</i> | 30 | <i>Oral exam</i> | <i>30</i> | |
| <i>Colloquium 2</i> | 40 | | | |