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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | Faculty of sciences and mathematics | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | **Mathematics** | | |
| Study Module (if applicable) | | | |  | | |
| Course title | | | | Geometry | | |
| Level of study | | | | x☐Bachelor ☐ Master’s ☐ Doctoral | | |
| Type of course | | | | ☐ Obligatory x☐ Elective | | |
| Semester | | | | x ☐ Autumn ☐Spring | | |
| Year of study | | | | 2 | | |
| Number of ECTS allocated | | | | 7 | | |
| Name of lecturer/lecturers | | | | Mića Staković | | |
| Teaching mode | | | | x☐Lectures ☐Group tutorials ☐ Individual tutorials  ☐Laboratory work ☐ Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| *Student is able to solve problems and to solve tasks for absolute and Euclidean geometry.* | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| **Theoretical study**  **ABSOLUTE GEOMETRY. Basic concepts and group axioms in geometry. Axioms of incidence. The consequences of the axioms of incidence. Axioms of order. The consequences of the axiom of order. The term of straight line. Ray and its attributes. Orientation of line. Definition and properties semi plain. Angular lines and angle. Orientation of plane. Halfspace and separation of space using plane. Dihedral surface and Dihedral. Pean views on the identification of lines, planes and space with some sets of points. Single connected polygonal surfaces. Multiply connected polygonal surfaces. Clew surface and clew. Polyhedral surfaces. Polyhedra. Topological properties of polyhedra. Topological platonic solid.**  **CONGRUENCE AND APPLICATION. Axioms of congruence and their first consequences. Isometric transformations of the space Sn. The coincidence of the figures. Coincidence of angles. Straight angle. Attitudes of triangles congruent. Orthogonality of lines and planes. Coincidence of Dihedral. The specific properties of isometric transformations. The axial reflection of the plane S2. Properties of axial reflection of the plane S2. Axisymmetrical figures in the plane S2. Presentation of isometric transformation of the plane S2 using axial reflection. Transmutation of isometric transformation and automorphism of group G (I). Central rotation of the plane S2. Central symmetry of order n in the plane S2. Translation of the plane S2. Translational (sliding) a reflection of the space S2. Specific types of isometric transformation of the space S3. Axial rotation of the space S3. The axial symmetry of order n space space S3. Translation of the space S3. Rotary reflection of the space S3. Central reflections of the space S3. Scrolling reflection of the space S3. Helical movement of the space S3. Continuity in geometry. Legendre theorems. Equivalents of Euclid's fifth postulate.**  **EUCLIDEAN GEOMETRY. Axiom of parallelism. Euclidean geometry. Isometric transformations of the space En. The similarity and homothety. The geometry of the circle and the sphere.**  **Practical teaching**  **Handle the various problems and tasks that follow theoretical lessons.** | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| x☐Serbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)  ☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |
| **ASSESSMENT METHODS AND CRITERIA** | | | | | | |
| **Pre exam duties** | **Points** | | **Final exam** | | | **points** |
| **Activity during lectures** | **6** | | **Written examination** | | | **0** |
| **Practical teaching** | **0** | | **Oral examination** | | | **40** |
| **Teaching colloquia** | **54** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |