Study programme(s): Mathematics (M3)

Level: bachelor

Course title: Foundations of Geometry 1 (M3-09)

Lecturer: Vojislav Petrović, Olga Bodroža-Pantić

Status: obligatory

ECTS: 8

Requirements: none

Learning objectives

Axiomatic approach to absolute and Euclidean geometry. Introducing basic geometric figures in Euclidean plane and space. Adoption of basic proof techniques.

Learning outcomes

Students are expected to be able to apply the axiomatic system in proving standard theorems and to solve standard geometric problems in the plane and in the space.

Syllabus

Theoretical instruction

Hilbert axiomatic system of absolute and Euclidean geometry. Basic geometric figures in the plane and in the space. Congruence and similarity transformations.

Practical instruction

Proving various assertions on lines, angles, triangles, quadrilaterals, cycles, planes, tetrahedrons, spheres etc. Applications of congruence and similarity transformations.

Literature

1. M. Prvanović, *Osnovi geometrije*, Građevinska knjiga, Beograd 1987.
2. Z. Lučić, *Euklidska i hiperbolična geometrija*, Univerzitet u Beogradu 1994.
3. K. Borsuk, W. Szmielew, *Foundation of Geometry*, Nort-Holland, Amsterdam 1960.
4. R. Tošić, V. Petrović, *Problemi iz geometrije* (*metodička zbirka zadataka*) Univerzitet u Novom Sadu 1995.

Weekly teaching load				Other: 0
Lectures: **4**	Exercises: **4**	Other forms of teaching: 0	Student research: 0	

Teaching methodology

Classical teaching supported by Powerpoint presentations. Exercises consist of analyzing and solving typical problems. Two colloquia as qualifying written exams and a final oral exam.

Grading method (maximum number of points 100)

Pre-exam obligations	**points**	**Final exam**	**points**
Colloquia	**50**	Oral exam	**50**