Study programme(s): Mathematics (M3)

Level: bachelor

Course title: Foundations of Geometry 2 (M3-19)

Lecturer: Vojislav Petrović

Status: obligatory

ECTS: 5

Requirements: none

Learning objectives

Axioms of continuity and consequences. Introduction and main concepts of Bolyai-Lobachevskian geometry.

Learning outcomes

Students are expected to be able to apply various techniques in proving typical theorems of Bolyai-Lobachevskian geometry.

Syllabus

Theoretical instruction

Axioms of continuity. The sum of angles of a triangle. A line and a cycle. Two cycles. Main concepts and techniques in Bolyai-Lobachevskian plane. Orthogonal trajectories. Poincare model.

Practical instruction

Applications of theoretical results in proving other theorems in Bolyai-Lobachevskian plane and Poincare model.

Literature

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

Weekly teaching load				Other: 0
Lectures: **2**	Exercises: **2**	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 (maximum number of points 100)

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