Study programme(s): M3 Mathematics				
Level: bachelor				
Course title: Projective Geometry				
Lecturer: Nevena V. Pušić				
Status: elective				
ECTS: 5				
Requirements: none				
Learning objectives				
Knowing and understanding objects in projective space, ability of using characteristic instruments				
in solving geometric problems.				
Learning outcomes: Complete insight into synthetic geometry, mutual positioning of different				
geometries, choice of method for solving geometric problems, and understanding of principles of				
axiomatic foundation of mathematical theories.				
Syllabus				
Theoretical instruction				
Axioms of Hilbert system of Projective geometry. Desargues' theorems. Principles of duality.				
Perspective and projective mappings. Classification. Involution. Homology. Correlation. Polarity.				
Properties of second order and second class of curves. Steiner, Pascal and Brianchon theorems.				
Projective mapping of curves. Steiner construction. Absolute straight line. Axiomatic foundation				
of affine geometry. Orthogonality. Foundation of Euclidean geometry. Transformations.				
Practical instruction				
Solving problems related to the content of the theoretical lectures.				
1. Mileva Prvanovic: Projektivna geometrija, Naucha knjiga, Beograd, 1986.				
2. Bruce Meserve: Fundamental Concepts of Geometry, Dover Books on Mathematics, 2010.				
3. C. E. Springer: Geometry and Analysis of Projective Spaces, Freeman, 1964.				
4. O. Veblen and J. w. Toung: Projective Geometry 1, 11, Blaisden Publishing Company, 1946.				
Weekly teaching load Other.				
Lectures: 2 Exercises: 2 Other forms of Student research:				
teaching:				
Teaching methodology				
Blackboard.				

Grading (maximum number of points 100)				
Pre-exam obligations	points	Final exam	points	
Practical activities	60	Oral exam	40	