Study programme(s): M3 Mathematics

Level: bachelor, module Theoretical mathematics

Course title: Analytic Geometry M3-17

Lecturer: Nevena V. Pušić

Status: obligatory

ECTS: 5

Requirements: none

Learning objectives

Getting knowledge in using vectors and analytic expressions in geometry, relatively limited to linear objects, curves of second and higher order and surfaces of second order and their mutual relationships.

Learning outcomes

Skills of getting analytic formulas which characterize elementary geometric relations in physical and Euclidean space and their adequate application in solving problems, together with geometric interpretation of results**.**

Syllabus

Theoretical instruction

Vectors and different kinds of their products. Projections. Different systems of coordinates and transition from one to another. Equations of elementary curves. Space. Point, straight line, plane and their mutual relationships. Pencils. Conic sections. Focal parameter. Diretrixes. Determinants of third order. Matrices. Orientation. Orthogonal transformations. Algebraic curves and surfaces. Conic, cylindrical and rotational surfaces.

Practical instruction

Solving problems related to the content of the theoretical lectures.

Literature

1 N. Bokan, N. Blažić, Z. Lučić, Z. Rakić: Analitička geometrija, Newslines & Matematički fakultet, Beograd, 2002.

2. П. П. Александров: Лекции по аналитической геометрии I, „Наука“, Москва, 1968.

3. G. Thomas, R. Finney: Calculus and Analytic Geometry, Adison-Wesley Publishing Company, 1998.

Weekly teaching load				Other:
Lectures: 2	Exercises: 2	Other forms of teaching:	Student research:	

Teaching methodology

Blackboard presentations.

Grading (maximum number of points 100)

Pre-exam obligations	**points**	**Final exam**	**points**
Colloquia	60	Oral exam	40