Level: bachelor

Course title: Analytic Geometry (M4-07)

Status: obligatory

ECTS: 5

Requirements: none

Learning objectives

Getting knowledge about 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 using while 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 the third order. Matrices. Orientation. Orthogonal transformations. Algebraic curves and surfaces. Conic, cylindrical and rotational surfaces.

Practical instruction

Solving problems from the upper content.

Weekly teaching load				Other: 0
Lectures: 2	Exercises: 2	Other forms of teaching: 0	Student research: 0	