Level: bachelor

Course title: Basic Mathematics

Status: obligatory

ECTS: 9

Requirements:

Learning objectives

The aim of course is to enable students to apply advanced mathemtical knowledge from linear algebra, functions and integrals in chemistry.

Learning outcomes After taking the course, the student should have developed:

General capabilities: basic knowledge of this field, following the literature, analysis of various solutions and the choice of most adequate solution, application in practice and other subjects.

Subject-specific capabilities: Student will be able to overcome difficulties caused with the transition from elementary to advance mathematical thinking, and to continue with accepting limits processes and other contents in advance mathematics, applying mathematical modeling process on the chemical problems.

Syllabus

Theoretical instruction

- Elements of linear algebra. Determinants, systems of linear equations, vectors. Mathematical models in chemistry.
- Functions. Basic notions. Elementary functions: quadratic, rational, logarithmic, exponential and trigonometric functions as the mathematical models for chemistry problems.
- Derivative of a function. Definition and properties of the first derivative. Examination of functions.
- Indefinite and definite, properties and the applications..
- Mathematical modelling by using dynamic software

Practical instruction

Problem solving

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