

Course title: Calculation methods in chemical engineering – ~~selectable~~/ regular course

Number of contact hours: 15 hours (15 h Computer Laboratory/seminars)

ETCS credits: 1

Course description: The aim of the course is to provide the background needed to acquire the following knowledge and skills: proper selection of computational tools, knowledge of typical computational problems in process engineering, chemistry and technology and the ability to solve such problems. As the result of the course students will get to know some basic numerical methods used in engineering calculations. They will be able to use mathematical knowledge to solve practical problems from the field of chemical engineering and technology, chemistry and technique. The program will cover the general information on calculation methods in chemical engineering, solving systems of algebraic linear equations, interpolation, genetic algorithms and Monte Carlo methods.

Education effects (P7S_UW, P7S_WG):

- **knowledge:** Student knows basic numerical methods used in engineering calculations
- **skills:** Student can use mathematical knowledge to solve practical problems from the field of chemical engineering, chemistry and technique; student can choose a calculation tool that is adequate to the problem to be solved
- **social:** student is able to work independently and in the group

Literature: [1] Sauer T. — Numerical analysis, Boston, 2006, Pearson Education [2] Finlayson Bruce A. — Introduction to chemical engineering computing, New Jersey, 2012, John Wiley & Sons

Assessment method: Presentation

Prerequisites: Mathematics, Basic knowledge in: flow processes, heat transfer processes and mass transfer processes

Primary target group: All specialties students

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