

Course title:**Computational Methods in Chemical Engineering I****Institute/Speciality:**

FACULTY OF CHEMICAL ENGINEERING AND TECHNOLOGY / Engineering of Technological Processes

Erasmus subject code:

WITCh ICHIP oIIS C9

Number of contact hours:

30 hours (15h lectures + 15h computer laboratories)

Course duration:

1 semester (spring)

ETCS credits:**2****Course description:**

The acquisition of the following skills: proper selection of computational tools, implementation of simple programs for solving typical computational problems in process engineering, chemistry and technology, utilization of packaged applications. After course student knows basic numerical methods used in engineering calculations, can use mathematical knowledge to solve practical problems from the fields of chemical engineering, chemistry and technique, can choose calculational tool that is adequate to the problem to be solved, and can use ready-to-use programs to solve numerical problems.

Lectures and laboratories content:

General information on calculational methods in chemical engineering/Systems of algebraic linear equations/Interpolation: Lagrange, Newton and spline methods / Genetic algorithms / Monte Carlo methods / Graphic interpretation of results

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:

Practical laboratories and finaltest

Prerequisites:

Mathematics, Flow processes, Heat transfer processes, Mass transfer processes, Chemical reactors engineering

Primary target group:

Chemical Engineering Study for MSc (1st year of II cycle of study, after completing Bachelor in Chemical Engineering)

Lecturer:

dr inż. K. Bizon (spring semester)

Contact person:

dr inż. K. Bizon, e-mail: kbizon@chemia.pk.edu.pl

Deadline for application:

15th of January for spring semester

Remarks:

The course runs regularly