

Course title: **Raw materials and processes of inorganic technology**

Institute/Division: **FACULTY OF CHEMICAL ENGINEERING AND TECHNOLOGY**

Number of contact hours: **75 hours** (15 h lectures & 30 h exercises & 30 h projects)

Course duration: 1 semester (5th semester of regular I cycle studies - fall)

ETCS credits: **6**

Course description:

The course covers the most important information about raw materials and processes of inorganic chemical technology.

Lectures include a discussion of the major raw materials used in inorganic technology as well as the production technology of the most important inorganic chemicals like sulphuric acid, nitric acid, phosphoric acid, sodium carbonate, fertilizers and others.

Exercises involve mass and heat balance calculations of various processes in inorganic chemical technology.

Projects involve the development of a simple technological project of the selected processes in the field of inorganic chemical technology containing short description, basic balance calculations and block diagram.

Education effects :

- knowledge : student knows the most important raw materials used in inorganic chemical technology
student knows the most important processes in inorganic chemical technology
student knows the most important products of the inorganic industry, the method of their production, as well as their properties and application
- skills: student is able to independently perform calculations regarding mass and heat balance of various unit processes and unit operations in inorganic chemical technology
student is able to obtain necessary information from literature and databases and use them to prepare a simple technological project of the selected processes in inorganic chemical technology
student is able to perform a simple technological project of the selected processes in inorganic chemical technology
- social: student is able to work independently and in the group during preparation of the project

Literature:

- [1] Jess A., Wasserscheid P. - Chemical Technology: An Integral Textbook, 2013, John Wiley & Sons
- [2] Benvenuto M. A. - Industrial Inorganic Chemistry, 2015, De Gruyter
- [3] Gilmour R. - Phosphoric Acid: Purification, Uses, Technology, and Economics, 2014, CRC Press
- [4] Keleti C. - Nitric Acid and Fertilizer Nitrates, 1985, CRC Press
- [5] King M., Moats M., Davenport W. – Sulfuric Acid Manufacture, 2013, Elsevier
- [6] materials given by the teacher

Assessment method: Exam / projects / calculation tests

Prerequisites: Basic knowledge in the field of inorganic chemistry and chemical technology.

Primary target group: Students from all specialties

Lecturer: **dr inż. Marta Marszałek, dr inż. Anita Staroń**

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Remarks: Regular course