

**Course title:** Introduction to industrial catalytic processes

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

**Number of contact hours:** 15 hours (15 h lectures)

**Course duration:** 1 semester (6<sup>th</sup> semester of regular I cycle studies - spring)

**ETCS credits:** 1

**Course description:** The aim of the course is to provide an understanding of the basic and applied aspects of industrial catalytic processes. Within the course, the student will gather knowledge in a field of basic concepts of catalysts, methods of preparation and characterization of industrial catalysts, basic catalytic mechanisms and the most utilized industrial catalytic processes.

**Education effects :**

- knowledge: student has a knowledge in basic concepts of catalysis including methods of preparation and characterization of catalysts, student has a knowledge about basic mechanisms in heterogeneous catalysis, student has a knowledge about the most utilized industrial catalytic processes
- skills: Student is able to describe the basics of catalytic activity and selectivity. describe chemical and physical properties of industrial catalysts; Exemplify industrial applications that utilize heterogeneous catalysts, describe the methods for preparation of heterogeneous catalysts, explain mechanisms for heterogeneous catalytic processes;

**Literature:** [1] Jacob A. Moulijn, Chemical Process Technology  
[2] Gerhard Ertl (Editor) , Helmut Knözinger (Editor) , Ferdi Schüth (Editor) , Jens Weitkamp (Editor), Handbook of Heterogeneous Catalysis

**Assessment method:** Final test

**Prerequisites:** Basic knowledge in organic and inorganic chemistry and technology.

**Primary target group:** Students from all specialties

**Lecturer:** dr hab. inż. Izabela Czekaj, prof. PK

**Contact person:** dr hab. inż. Izabela Czekaj, prof. PK, izabela.czekaj@pk.edu.pl

**Deadline for application:** 15<sup>th</sup> of January

**Remarks:** The course is selectable