Nazwa w jęz. angielskim: CFD methods

Dane dotyczące zajęć:
Information on course:

Jednostka oferująca: Wydział Chemiczny // dr hab. inż. Marcin Lemanowicz, prof. PŚ
Course offered by: Faculty of Chemistry // dr hab. inż. Marcin Lemanowicz, prof. PŚ

Język wykładowy:

angielski

Language:

English

Strona WWW:
Course homepage:

Skrócony opis:

Short description:

The goal of the course is to present the basic problems concerning application of computational fluid dynamics (CFD) in chemical engineering on the basis of the ANSYS Workbench software. After this course students should be able to prepare a numerical simulations of chosen phenomena from fluid dynamics.

Opis:

Description:

Computer laboratory:
a) ANSYS Workbench basics
b) Basic knowledge of numerical simulations of various chemical engineering processes
c) Preparation of the geometric model using the ANSYS Workbench software
d) Generating the correct numerical mesh using the ANSYS Workbench software
e) Performing simulations using computational fluid mechanics using the FLUENT solver

Number of hours of classes with direct participation of academic teachers or other persons teaching courses and students.
Contact hours
Computer laboratory: 45
Student's own work
Preparation: 45h
Total workload: 90
Number of ECTS credits: 3

Literatura:

Bibliography:

1. ANSYS Workbench – manual.
2. Blazek J., Computational Fluid Dynamics: Principles and Applications, Elsevier Science 2005.
3. Date A.W., Introduction to Computational Fluid Dynamics, Cambridge University Press 2009.

Efekty uczenia się:

Learning outcomes:

Knowledge
The student knows and understands:
The foundation of ANSYS workbench
Basic knowledge of numerical simulations of various chemical engineering processes

Skills
The student is able to:
Prepare a geometric model using the ANSYS workbench package
Generate the correct numerical grid using the ANSYS workbench package
Perform a computational fluid dynamics simulation using the FLUENT solver

Social competence
The student is ready to:
Thinking creatively

Metody i kryteria oceniania:

Assessment methods and assessment criteria:

Preparation of own simulation.

Przynależność do grup przedmiotów w cyklach:
Element of course groups in various terms:

Opis grupy przedmiotów Course group description	Cykl pocz. First term	Cykl kon. Last term
przedmioty obieralne studia stacjonarne i niestacjonarne stopień studiów – dowolny kierunek studiów – dowolny, semestr dowolny elective courses full-time and part-time studies degree - any field of study - any semester - any	2023/2024	