COURSE DESCRIPTION CARD - SYLLABUS

Course name

Komputerowe wspomaganie projektowania (Computer Aided Design)

Course

Field of study

Technologia chemiczna (Chemical Technology)

Year/Semester

III/6

Area of study (specialization)

Profile of study

general academic

Level of study

First-cycle studies

Course offered in

Polish

Form of study

full-time

Requirements

elective

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

15

Number of credit points

1

Lecturers

Responsible for the course/lecturer:

dr hab. inż. Szymon Woziwodzki

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tel. 61 665 21 47

Wydział Technologii Chemicznej

ul. Berdychowo 4, 61-131 Poznań

tel.: 61 665 2147

Responsible for the course/lecturer:

dr inż. Piotr Mitkowski

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Wydział Technologii Chemicznej

ul. Berdychowo 4, 61-131 Poznań

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Prerequisites

the basis of mathematical and engineering calculations; the principles of flowsheets drawing according to PN ISO 10628; the principles of engineering drawing; the ability to use software to create flowsheets and process schemes(i.e. MS Visio) and to design of industrial equipment (i.e. AutoCAD); the ability to solve design and process engineering problems; student is aware of the advantages and limitations of individual work in solving the problems of an industrial character and design; student knows the limits of his knowledge and sees the need for the exploration of knowledge.

Course objective

The aim of the course is to acquaint students with the integrated solutions serving the design of industrial installations and chemical plant and their implementation, combined with open and flexible solutions supporting life-cycle management

Students perform a simplified multi-stage distillation installation design using Aveva Engineering and Design platform.

Course-related learning outcomes

Knowledge

1. A student knows methods of design of process installations and plant facility, [K_W14]; [K_W15]

2. A student knows methods of 3D design of plant facility based on the reservation of space [K_W13]; [K_W12]; [K_W15]

Skills

1. A student can create simple and intelligent flowsheets using specialized software, [K_U07], [K_U15]

2. A student can create 3D models of industrial installations based on P&ID diagram: [K_U07], [K_U09], K_U15

3. A student can make design changes in existing installation models: [K_U12], [K_U07]

4. Can perform basic process calculations using a specialized process simulator, [K_U08], [K_U07]

Social competences

1. The student is aware of and understands the practical application of the gained knowledge and skills in design of industrial facilities and process installations [K_K01]

2. The student is aware of the limitations of process and engineering modeling [K_K02]

3. The student is aware of the continuing education [K_K04]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The skills gained as part of the project classes are verified in the execution's form of the project task during the classes. The final evaluation is the sum of the partial points for implementing the project activity and implementation of the project during the classes.

Programme content

The course includes the principles of design of plant facility and industrial installations using specialised software Aveva Engineering and Design.

During the course students perform simplify process design of exemplary multi-stage distillation, beginning from process simulation (AVEVA Process Simulation) then creation flow diagram (AVEVA Diagrams) and graphical representation (3D model) of plant installation (AVEVA E3D Design).

Teaching methods

Multimedia presentation, presentation illustrated with examples on the table, and resolving tasks provided by the lecturer

Bibliography

Basic

Auxiliary materials delivered by supervisors

Additional

AVEVA technical documentation

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,0
Classes requiring direct contact with the teacher	20	0,8
Student's own work (literature studies, preparation for classes, preparation for defence/exam, project preparation) [1]	5	0,2

[1] delete or add other activities as appropriate