



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Computer aided design [S2iChiP1-IC>KWP]

### Course

Field of study

Chemical and Process Engineering

Year/Semester

1/2

Area of study (specialization)

Chemical Engineering

Profile of study

general academic

Level of study

second-cycle

Course offered in

polish

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

0

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

30

### Number of credit points

2,00

### Coordinators

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### Lecturers

### 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 as well as chemical plant and their implementation, combined with open and flexible solutions supporting lifecycle management

### Course-related learning outcomes

#### Knowledge:

1. a student knows methods of design of process installations as well as plant facility - [k\_w01; k\_w03]
2. a student knows methods of 3d design of plant facility based on the reservation of space - [k\_w02; k\_w04]

#### Skills:

1. a student can create simple as well as intelligent flowsheets using specialized software (ms visio, aveva diagram). - [k\_u07]
2. a student can create 3d models of industrial installations based on p&id schemes (aveva e3d) - [k\_u09]
3. a student can make design changes in existing installation models (aveva diagram, e3d). - [k\_u20]

#### Social competences:

1. a student has the awareness and understanding of aspects of the practical application of knowledge and skills in 3d design - - [k\_k01]
2. a student has formed awareness of the limitations of modelling - [k\_k02]
3. a student is aware of the of lifelong learning - [k\_k04]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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The skills acquired in the project classes are verified in the form of a defense taking place in the last classes. The final evaluation is the sum of the partial points for the implementation of the project as well as cooperation within the project group and the implementation of the project within the project classes.

### Programme content

The course includes: the principles of design of plant facility as well as industrial installations using specialized software i.e. 3D AutoCAD Plant, AVEVA Plant.

During the course students perform design project, beginning from an industrial plant flowsheet up to the creation of graphical representation (3D model) of plant installation.

Students use specialized software to create technological schemes: AVEVA Diagrams and to create a 3D model of the installation AVEVA E3D.

### 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	50	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	20	1,00