



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Elective subject III (Autodesk AutoCad Plant 3D – from flowsheet diagram to 3D model)

### Course

Field of study	Year/Semester
Chemical and process engineering	2/3
Area of study (specialization)	Profile of study
Chemical engineering	general academic
Level of study	Course offered in
Second-cycle studies	Polish
Form of study	Requirements
full-time	elective

### Number of hours

Lecture	Laboratory classes	Other (e.g. online)
15		
Tutorials	Projects/seminars	

### Number of credit points

1

### Lecturers

Responsible for the course/lecturer:

dr hab. inż. Szymon Woziwodzki

Responsible for the course/lecturer:

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### Prerequisites

basics of mathematical and engineering calculations, rules of creating technological diagrams in accordance with PN ISO 10628, rules of technical drawing, ability to design industrial devices (e.g. AutoCad), ability to solve basic design problems in chemical and process engineering, the student is aware of the advantages and limitations of individual work when solving problems of an industrial and design nature, the student knows the limitations of his knowledge and sees the need to deepen it

### Course objective

The aim of the training is to familiarize students with software for creating technological diagrams and a 3D model of industrial installations based on Autodesk AutoCAD Plant 3D software



### Course-related learning outcomes

#### Knowledge

1. Student knows the principles of designing industrial facilities and installations, K\_W01; K\_W02
2. Student knows the 3D design methods of industrial installations based on the space reservation for individual elements K\_W03; K\_W04

#### Skills

1. Student can create simple technological diagrams using AutoCAD P&ID, K\_U07, K\_U13 software
2. Student can create spatial models of industrial installations (Autodesk AutoCAD Plant 3D) K\_U09
3. Student can work in a team, K\_U02

#### Social competences

1. The student is aware and understanding the aspects of the practical application of the gained knowledge and skills in the design of industrial facilities and process installations [K\_K01]
2. The student is aware of the limitations of modeling and working in a group K\_K02, K\_K03
3. The student is aware of lifelong learning K\_K04

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Skills gained during project classes are verified in the form of a project carried out during the classes. The grade is the weighted average of the grade for the completed project and class attendance.

### Programme content

Principles of designing industrial facilities and installations with the use of AutoCad Plant 3D software are discussed.

As part of the design classes, students design an industrial installation, from the technological scheme to the creation of a graphic and spatial representation (3D model) of the installation.

Students use specialized software to create AutoCAD P&ID technological diagrams and to create a 3D model of the AutoCAD Plant 3D installation

### Teaching methods

A multimedia presentation, a presentation illustrated with examples given on the board

### Bibliography

#### Basic

1. materials delivered by supervisor
2. Autodesk Knowledge Network



<https://knowledge.autodesk.com/support/autocad-plant-3d/learn?sort=score>

Additional

1. Autodesk Plant 3D 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 laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	5	0,2

<sup>1</sup> delete or add other activities as appropriate