Zachodniopomorski Uniwersytet Technologiczny w Szczecinie

Faculty of Chemical Technology and Engineering

Field of study	Chemical Engineering		
Mode of study	stationary	*Level*	first cycle
Graduate's qualification	inżynier		
Area(s) of study	nauki techniczne		
Educational profile	general academic		
Module			
Course unit	**Chemical Engineering Projects Laboratory**		
Code	ChEn_1A_S_D01a		
Field of specialisation			
Administering faculty	Institute of Chemical Engineering and Environmental Protection Processes		
ECTS	9,0	*ECTS (forms)*	9,0
Form of course credit	credits	*Language*	english
Electives	11	*Elective group*	

Form of instruction	*Code*	*Semester*	*Hours*	*ECTS*	*Weight*	*Credit*
laboratory course	L	7	180	9,0	1,00	credits

Leading teacher	Szoplik Jolanta (Jolanta.Szoplik@zut.edu.pl)
Other teachers	Aleksandrzak Tomasz (Tomasz.Aleksandrzak@zut.edu.pl), Ambrożek Bogdan (Bogdan.Ambrozek@zut.edu.pl), Cudak Magdalena (Magdalena.Cudak@zut.edu.pl), Downarowicz Dorota (Dorota.Downarowicz@zut.edu.pl), Friedrich Małgorzata (Malgorzata.Bojarska@zut.edu.pl), Gabruś Elżbieta (Elzbieta.Gabrus@zut.edu.pl), Jaworski Zdzisław (Zdzislaw.Jaworski@zut.edu.pl), Karcz Joanna (Joanna.Karcz@zut.edu.pl), Kiełbus-Rąpała Anna (Anna.Kielbus-Rapala@zut.edu.pl), Konopacki Maciej (Maciej.Konopacki@zut.edu.pl), Kordas Marian (Marian.Kordas@zut.edu.pl), Łącki Henryk (Henryk.Lacki@zut.edu.pl), Major-Godlewska Marta (Marta.Major@zut.edu.pl), Murasiewicz Halina (Halina.Murasiewicz@zut.edu.pl), Pianko-Oprych Paulina (Paulina.Pianko@zut.edu.pl), Rakoczy Rafał (Rafal.Rakoczy@zut.edu.pl), Story Grzegorz (Grzegorz.Story@zut.edu.pl), Story Anna (Anna.Story@zut.edu.pl), Szoplik Jolanta (Jolanta.Szoplik@zut.edu.pl), Witkiewicz Konrad (Konrad.Witkiewicz@zut.edu.pl), Zakrzewska Barbara (Barbara.Zakrzewska@zut.edu.pl), Ziętarska Katarzyna (kzietarska@zut.edu.pl)

Prerequisites

W-1	Passing subjects from semester I-VI

Module/course unit objectives

C-1	Consolidation of detailed knowledge related to the key issues of chemical and process engineering.
C-2	Developing students' skills to acquire and evaluate literature data and formulate reports on this basis.
C-3	Developing students' skills in developing study results in the field of chemical engineering.
C-4	Developing of students' ability to present selected issues in the field of chemical engineering.
C-5	Improving students' ability to use the acquired knowledge for critical analysis and evaluation of the functioning of technical solutions in the field of chemical engineering.
C-6	Improving students' awareness of the need for continuous education and professional development.

Course content divided into various forms of instruction		*Number of hours*
T-L-1	Presentation the principles of the preparation of texts and scientific reports, reports on studies, expert opinions. Breakdown of content. Linguistic correctness. Quoting literature. Plagiarisms.	5
T-L-2	Presentation of the rules for the presentation of the progress in the diploma thesis. Principles and culture of discussing.	5
T-L-3	Conducting research, measurements, calculations related to the subject of engineering work.	84
T-L-4	Presentation by students of the progress in the research being the subject of the diploma theses. Discussion of the results obtained in the individual stages of the diploma theses.	40
T-L-5	Discussion of chemical engineering issues covered by the program content and proposed for the diploma exam. Examples of practical application of selected solutions.	46

Student workload - forms of activity		*Number of hours*
A-L-1	participation in classes	180
A-L-2	preparing a presentation	40
A-L-3	preparation for discussion on issues covered by program content	50

Teaching methods / tools

Teaching methods / tools	
M-1	Seminar
M-2	Didactic discussion

Evaluation methods (F - progressive, P - final)		
S-1	F	Credit based on the presented presentations
S-2	F	Credit based on the student's continuous activity assessment in class discussions
S-3	P	Final credit based on the average of the positive marks from the presentation and participation in the discussions.

Designed learning outcomes	Reference to the learning outcomes designed for the fields of study	Reference to the learning outcomes defined for the particular areas of education	Reference to learning outcomes leading to the degree of "inżynier"	Course objectives	Course content	Teaching methods	Evaluation methods
Knowledge							
ChEn_1A_D01a_W01 Student has a well-established detailed knowledge related to the key issues of chemical engineering.	ChEn_1A_W07 ChEn_1A_W08	P6S_WG_TA11		C-1	T-L-5	M-1 M-2	S-2 S-3
Skills							
ChEn_1A_D01a_U01 Student has the ability to acquire and critically evaluate data from the literature and formulate reports.	ChEn_1A_U01	P6S_UW_TA11		C-2	T-L-4 T-L-5	M-2	S-1
ChEn_1A_D01a_U02 Student is able to develop the results of research in the field of chemical engineering.	ChEn_1A_U02 ChEn_1A_U03 ChEn_1A_U05 ChEn_1A_U07 ChEn_1A_U08 ChEn_1A_U09 ChEn_1A_U14 ChEn_1A_U16 ChEn_1A_U17	P6S_UK P6S_UO P6S_UU P6S_UW_TA11 P6S_UW_TA12 P6S_UW_TA13 P6S_UW_TA14	P6S_UW_IA11 P6S_UW_IA12 P6S_UW_IA13 P6S_UW_IA14	C-3	T-L-1 T-L-4	M-1	S-1
ChEn_1A_D01a_U03 Student is able to prepare and present the development of research results in the field of chemical engineering.	ChEn_1A_U04	P6S_UK P6S_UW_TA11 P6S_UW_TA14		C-4	T-L-2 T-L-5 T-L-4	M-1 M-2	S-1
ChEn_1A_D01a_U04 Student is able to use the acquired knowledge for the critical analysis and evaluation of selected solutions in the field of chemical engineering.	ChEn_1A_U02 ChEn_1A_U05 ChEn_1A_U07 ChEn_1A_U08 ChEn_1A_U09 ChEn_1A_U14 ChEn_1A_U16 ChEn_1A_U17	P6S_UK P6S_UO P6S_UU P6S_UW_TA11 P6S_UW_TA12 P6S_UW_TA13 P6S_UW_TA14	P6S_UW_IA11 P6S_UW_IA12 P6S_UW_IA13 P6S_UW_IA14	C-5	T-L-5	M-2	S-2
Other social / personal competences							
ChEn_1A_D01a_K01 Student is aware of the need for continuous education and professional development.	ChEn_1A_K01 ChEn_1A_K03 ChEn_1A_K04 ChEn_1A_K05 ChEn_1A_K07	P6S_KK P6S_KO P6S_KR		C-6	T-L-4 T-L-5	M-1 M-2	S-2

Required reading
1. Don W. Green, Marylee Z. Southard, Perry's Chemical Engineers' Handbook, Mc Graw-Hill, New York, ISBN-13: 9780071834087
2. Warren L. McCabe, Julian C. Smith, Peter Harriott, Unit Operations of Chemical Engineering, Mc Graw-Hill, New York, ISBN-13: 9780071247108