

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Fundamentals of chemical technology / kinetics of reaction		Code xxx
Field of study Environmental Protection Technologies	Profile of study (general academic, practical) general academic	Year /Semester 3/5
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: - Classes: - Laboratory: - Project/seminars: 15		No. of credits 1
Status of the course in the study program (Basic, major, other) basic		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences technical sciences		ECTS distribution (number and %) 1 100% 1 100%
Responsible for subject / lecturer: dr hab. inż. Katarzyna Staszak e-mail: Katarzyna.Staszak@put.poznan.pl Faculty of Chemical Technology ul. Berdychowo 4, 60-965 Poznań tel.: 061 665 3771		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	W1 The graduate has a knowledge of mathematics which allows him/her to use mathematical methods to describe chemical processes and to perform calculations needed in engineering practice.
2	Skills	U1 The graduate can obtain necessary information from literature, databases and other sources related to chemical sciences, interpret them properly, draw conclusions, formulate and justify opinions.
3	Social competencies	K1 The graduate understands the need to develop and improve their professional, personal and social competences.
Assumptions and objectives of the course: Achieving knowledge in the field of chemical technology		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. The graduate has a knowledge of mathematics which allows him/her to use mathematical methods to describe chemical processes and to perform calculations needed in engineering practice.		K_W01, T1A_W01
2. The graduate knows the foundations of kinetics, thermodynamics and catalysis of chemical processes.		K_W08, T1A_W03
Skills:		
1. The graduate works individually and works effectively in a team.		K_U02, T1A_U02
2. The graduate uses computer programs assisting the implementation of typical tasks in <i>environmental protection technologies</i> .		K_U07, T1A_U08

Social competencies:	
1. The graduate can cooperate and work in a group, accepting various roles in it.	K_K03, T1A_K03

Assessment methods of study outcomes		
Evaluation of developed projects		
Course description		
Students develop projects related to solving the problems of kinetics of simple and complex reactions using non-linear algebraic and differential equations.		
Basic bibliography:		
<ol style="list-style-type: none"> 1 J. Szarawara, J. Skrzypek, A. Gawdzik, "Podstawy inżynierii reaktorów chemicznych", WNT Warszawa 1991. 2 A. Burghardt, G. Bartelmus, „Inżynieria reaktorów chemicznych”, PWN Warszawa 2001. 3 M. Wiśniewski, K. Alejski, Podstawy technologii chemicznej i inżynierii reaktorów, Wyd. P. P., Poznań 2017. 		
Additional bibliography:		
<ol style="list-style-type: none"> 1 S. Bretsznajder, W. Kawecki, J. Leyko, R. Marcinkowski, "Podstawy ogólne technologii chemicznej", WNT Warszawa 1973. 2 A. L. Myers, W.D. Seider, "Obliczenia komputerowe w inżynierii chemicznej", WNT Warszawa 1979. 		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in classes	15	
2. Realization of the project tasks	5	
3. Participation in consultations related to the implementation of the project	5	
Student's workload		
Source of workload	hours	ECTS
Total workload	25	1
Contact hours	20	
Practical activities	5	