

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Selected aspects of modern chemistry		Code 1010702211010702653
Field of study Chemical Technology	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 1
Elective path/specialty Composites and Nanomaterials	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 15 Classes: - Laboratory: 30 Project/seminars: -		No. of credits 2
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 2 100%
Responsible for subject / lecturer: prof. dr hab. Elżbieta Frąckowiak email: elzbieta.frackowiak@put.poznan.pl tel. 616653632 Faculty of Chemical Technology ul. Berdychowo 4 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student should be familiar with the backgrounds of inorganic chemistry. Student should be familiar with the backgrounds of organic chemistry. Student should be familiar with the backgrounds of physical chemistry. Student should be familiar with the backgrounds of quantum chemistry.
2	Skills	Student should be able to communicate in English. Student should be able to self-education.
3	Social competencies	Student should understand the need of self-education in terms of reading literature recommended by lecturer. Student should understand the importance of working separately and as a part of team.
Assumptions and objectives of the course: The main goal of the subject is to give a general overview into modern chemistry considered as a holistic matter.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Student is able to understand the relationships between different parts of chemistry - [K_W02] 2. Student understands the common phenomena appearing during technological process - [K_W06] 3. Student understands the importance of holistic thinking and consideration of chemistry - [K_W02]		
Skills:		
1. Student knows the pathway for selecting appropriate chemical concept of considered technology - [K_U01] 2. Student knows the general processes in modern chemical technology - [K_U09]		
Social competencies:		
1. Student is able to self-education - [K_K06] 2. Student understands the need of self-development - [K_K03] 3. Student understands the importance of the team-working - [K_K04]		
Assessment methods of study outcomes		
Written exam after lectures.		

Course description		
<p>This course constitutes an introduction to inorganic and physical chemistry for science majors, engineers, and the prehealth professions. Emphasizes the fundamental principles and theories of modern chemistry. Topics include the kinetics and thermodynamics; acid-base reactions; electrochemistry, coordination chemistry, and nuclear chemistry. The underlying unity of chemistry is a basic theme. Laboratories provide an introduction to basic techniques used in experimental chemistry. One experiment uses a computer interface to provide experience in modern methods of data collection and to allow thorough analysis of experimental results. Proper laboratory procedures, chemical safety rules, and environmentally sound methods of chemical disposal and waste minimization are important components of the course. Experiments are selected to provide illustration and reinforcement of course topics.</p>		
<p>Basic bibliography:</p> <p>1. General Chemistry: Principles and Modern Applications (10th Edition), Ralph H. Petrucci, F. Geoffrey Herring, Jeffrey D. Madura, Carey Bissonette, Pearson Prentice Hall, 2009</p> <p>2. Principles of Modern Chemistry, David W. Oxtoby, H. Pat Gillis, Alan Campion, Cengage Learning, 2008</p>		
<p>Additional bibliography:</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Lecture	30	
2. Laboratory classes (practice)	30	
3. Consultation	10	
4. Exam	1	
Student's workload		
Source of workload	hours	ECTS
Total workload	71	2
Contact hours	71	0
Practical activities	30	0