

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Organic chemistry</b>		Code <b>1010704231010720012</b>
Field of study <b>Chemical Technology</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>2 / 3</b>
Elective path/specialty <b>-</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: <b>20</b> Classes: <b>20</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>6</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>3 100%</b> <b>3 100%</b>
<b>Responsible for subject / lecturer:</b>  dr Marek Łożyński email: Marek.Lozynski@put.poznan.pl tel. (61) 665 3534 Faculty of Chemical Technology ul. Piotrowo 3 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	principles of knowledge in the scope of general and organic chemistry on the middle level
2	<b>Skills</b>	the ability of formulation and solution of simple organic chemistry problems on the basis of possessing knowledge
3	<b>Social competencies</b>	the understanding of permanent extending of his(her) knowledge
<b>Assumptions and objectives of the course:</b> The acquirement of the knowledge of organic chemistry by students in the scope defined in the program of chemical technology non-stationary studies. The development of abilities of a student in solution of basic problems related to reactivity of organic compounds possessing different functional groups		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b> 1. Student has the alignment of the knowledge on the theoretical basis in the scope of organic chemistry, knows the problems of hybridization, resonance, characteristic reactions of important groups of organic compounds including reaction mechanisms. - [K_W03] 2. Student knows the basic physicochemical properties of different groups of organic compounds and is aware of the necessity of application of proper safety precautions during laboratory course, understand the necessity of segregation of disposed materials. - [K_W08] 3. Student has is capable to plan synthesis of simple organic compounds having different functional groups, which can be applied in chemical industry and is able to characterize necessary reagents and perform analysis of emerging products. - [K_W09]		
<b>Skills:</b> 1. Student is able to retrieve information from textbooks, electronic data bases and another sources, is able to interpret and formulate conclusions, also practical. - [K_U01] 2. Student has ability of self-education. - [K_U05] 3. Student knows main principles of safe work in laboratory of organic chemistry - [K_U12]		
<b>Social competencies:</b>		

1. Student understand the necessity of permanent lifting of professional qualifications - [K\_K01]
2. Student has awareness of importance of making decisions in the future of his (her) professional activity, and its multiple effects on environment. - [K\_K02]
3. Student is able to work individually, with full responsibility and is ready to cooperate effectively in the ensemble, performing tasks related to laboratory work and in the factory. - [K\_K04]

### Assessment methods of study outcomes

Lectures: twice assessment of the knowledge and abilities on the basis of writing exam

Classes: individual oral responses and on the basis of trial.

Laboratory: writing test or oral response just before each exercise on the basis of texts prepared, the assessment of realization of given synthesis of organic compound with adherence of safety precautions in chemical laboratory.

### Course description

Bonding, hybridizations, stereochemistry and 3D arrangement of atoms in molecules. Alkanes, alkenes, alkynes. Aromatic compounds, aromaticity, particular electrophilic substitution of benzene and its mono derivatives. Alkyl halides reactions SN1, SN2, E1 and E2. Compounds with sp<sup>3</sup>-hybridized oxygen and their sulfur analogs: alcohols and phenols, thiols, ethers, sulfides.

#### Basic bibliography:

1. G. Patric Chemia organiczna PWN, Warszawa 2002.
2. A. Vogel, Preparatyka organiczna, WNT, Warszawa 2006.
3. D. Buza, W. Sas, P. Szczeciński, Chemia organiczna. Kurs podstawowy, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2006
4. D. Buza, A. Ćwil, Zadania z chemii organicznej z rozwiązaniami, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2003.

#### Additional bibliography:

1. J. McMurry, Chemia organiczna, PWN, Warszawa 2007.

### Result of average student's workload

Activity	Time (working hours)
1. Presence in lectures, classes	40
2. Consultations of classes	5
3. Consultarions before exam	2
4. Preparation hours for laboratories	0
5. Preparation hours for credit and presence	12
6. Preparation hours for exams and presence	14

### Student's workload

Source of workload	hours	ECTS
Total workload	73	3
Contact hours	51	3
Practical activities	0	0