Course code: …….. **Plan position:** ……

A. INFORMATION ABOUT THE COURSE

B. Basic information

Name of course	***Organic chemistry***
Field of studies	Chemical technology
Level of studies	First degree
Profile of studies	General academic
Form of studies	Stationary
Specialty	1. Chemical process technology 2. Bioengineering 3. Chemistry and technology of cosmetics
Unit responsible for the field of studies	Faculty of Chemical Technology and Engineering/Division of Organic Chemistry
Name and academic degree of teacher(s)	Ryszard Gawinecki Professor, Janina Kabatc Professor, Agnieszka Skotnicka PhD
Introductory courses	Not available
Introductory requirements	The student should be proficient in basic knowledge of organic chemistry, as well as being aware of, that the properties of organic compounds and the respective functional groups are the result of the properties of their constituent atoms. Knowledge of the concepts of dissociation, hydrolysis and the potency of acids and bases.

C. Semester/week schedule of classes

Semester	Lectures (W)	Auditorium classes (Ć)	Laboratory classes (L)	Project classes (P)	Seminar (S)	Field classes (T)	Number of ECTS points
summer	30		30				8

2. LEARNING OUTCOME

No.	Learning outcomes description	The reference to the learning outcomes of specific field of study	The reference to the learning outcomes for the area
KNOWLEDGE			
W1	Has a structured, theoretically underpinned general knowledge of organic chemistry.	K_W03	P6S_WG
W2	Has knowledge of techniques and methods for synthesis, purification, characterisation and identification of chemical products.	K_W11	P6S_WG
SKILLS			
U1	Works individually and as part of a team.	K_U02	P6S_UO

			P6S_UK
U2	Performs chemical experiments, investigates chemical processes and interprets the results obtained.	K_U06	P6S_UW
U3	Uses chemical terminology and compound nomenclature correctly, also in a foreign language.	K_U08	P6S_UW P6S_UK
U4	Be able to characterise different states of matter and distinguish between types of chemical reactions and be able to select the conditions for them to take place within a specific chemical process.	K_U09	P6S_UW
U5	Use basic laboratory techniques used in chemical technology.	K_U10	P6S_UW
SOCIAL COMPETENCES			
K1	Is aware of the responsibility for collaborative tasks associated with teamwork.	K_K04	P6S_KK P6S_KO

3. TEACHING METHODS

A. Traditional methods used

Multimedia lectures, exercises at the blackboard consisting in solving tasks and discussing their correctness, laboratory exercises - ongoing consultations with the teacher about the correctness of of carrying out the exercises.

4. METHODS OF EXAMINATION

A prerequisite for passing the course is to take an exam (written and oral) after obtaining credit for the auditory exercises (passing written colloquia) and passing the laboratory exercises (passing written and/or oral colloquia and correct execution of the exercises).

5. SCOPE

Lectures	Winter Basic concepts of organic chemistry concerning the structure and reactivity of organic compounds. Presentation of groups of organic compounds, concepts of the reactivity of functional groups and reaction mechanisms. The lectures cover the following topics: classification and systematics of organic compounds, homologous series, isomerism, aromaticity, the most important functional groups, aliphatic and aromatic hydrocarbons, alkanes and alkenes - comparison of properties and reactivity, aromatic hydrocarbons - electrophilic aromatic substitution reaction, halogenated hydrocarbons - nucleophilic substitution reaction, alcohols and phenols - comparison of physical and chemical properties, ethers, aldehydes and ketones – addition-elimination reactions and nucleophilic reactions, carboxylic acids and their derivatives, esterification reaction, fats. Nitrogenous organic compounds, amines and their basicity, optical isomerism, organometallic compounds, macromolecular organic compounds. Summer Basic concepts of organic chemistry concerning the structure and reactivity of organic compounds. Presentation of groups of organic compounds, concepts of the reactivity of functional groups and reaction mechanisms. The lectures cover the following topics: classification and systematics of organic compounds, homologous series, isomerism, aromaticity, the most

	important functional groups, aliphatic and aromatic hydrocarbons, alkanes and alkenes - comparison of properties and reactivity, aromatic hydrocarbons - electrophilic aromatic substitution reaction, halogenated hydrocarbons - nucleophilic substitution reaction, alcohols and phenols - comparison of physical and chemical properties, ethers, aldehydes and ketones – addition-elimination reactions and nucleophilic reactions, carboxylic acids and their derivatives, esterification reaction, fats. Nitrogenous organic compounds, amines and their basicity, optical isomerism, organometallic compounds, macromolecular organic compounds
Laboratories	Summer Laboratory exercises concern the practical use of the knowledge gathered during lectures and auditorium exercises. In addition, the student learns how to independently build equipment for the practical implementation of the previously assigned exercise, selects and performs basic physicochemical analysis, synthesizes, separates and purifies organic compounds from post-reaction mixtures.

6. METHODS OF VERIFICATION OF LEARNING OUTCOMES

LEARNING OUTCOME	Form of assessment					
	Oral examination	Written exam	Colloquium	Project	Presentation	Report
W1	x	x				
W2	x	x				
U1-U5			x			
K1			x			

7. LITERATURE

Basic literature	McMurry J.E., 2011, Organic Chemistry, 8 th ed., International Edition, Belmont, USA: Brooks/Cole-Thomson. Solomons T.W.G., 1996, Organic Chemistry, 6 th ed. John Wiley & Sons. Inc. New York. Clayden J., Greeves N., Warren S., 2012, Organic Chemistry, Oxford University Press. Vollhardt P.K., 2018, Organic Chemistry, 8th ed. Macmillan Education.
Supplementary literature	Vogel A.I., 1989, Vogel's Textbook of Practical Organic Chemistry, 5th ed., Longman Scientific & Technical, New York Materials prepared by lecturer.

8. TOTAL STUDENT WORKLOAD REQUIRED TO ACHIEVE EXPECTED LEARNING OUTCOMES EXPRESSED IN TIME AND ECTS CREDITS

Student's activity		Student workload– number of hours
Classes conducted under a direct supervision of an academic teacher or other persons responsible for classes	Participation in classes indicated in point 1B	60
	Supervision hours	40
Student's own work	Preparation for classes	55
	Reading assignments	45

	Other (preparation for exams, tests, carrying out a project etc)	40
Total student workload		240
	Number of ECTS points	**8**