

Course description

Course abbreviation:	KCH/SZOBC	Page:	1 / 2
Course name:	Organic chemistry and biochemistry		
Academic Year:	2016/2017	Printed:	20.01.2018 15:41

Department/Unit /	KCH / SZOBC	Academic Year	2016/2017
Title	Organic chemistry and biochemistry	Type of completion	State Final Exam
Accredited/Credits	Yes, 0 Cred.	Type of completion	
Number of hours			
Occ/max	Status A Status B Status C	Course credit prior to	NO
Summer semester	7 / - 0 / 0 0 / 0	Counted into average	YES
Winter semester	0 / - 0 / 0 0 / 0	Min. (B+C) students	not determined
Timetable	Yes	Repeated registration	NO
Language of instruction	Czech	Semester taught	Winter, Summer
Substituted course	None	Internship duration	0
Preclusive courses	N/A		
Prerequisite	N/A		
Informally recommended courses	N/A		
Courses depending on this Course	N/A		

Course objectives:

- Aims
Fields: 1. Alkanes (nomenclature, reactivity, preparation). Alkynes (nomenclature, the electron structure, reactivity, preparation).
2. Alkenes (nomenclature, electron structure of double bond, reactivity, mechanism of electrophilic and radical addition on double bond, preparation).
3. Arenes (nomenclature, the electron structure and theory of aromatic state, reactivity).
4. Halogen derivatives (nomenclature, the chemical properties and preparation). Use of the organometallic compounds in organic chemistry.
5. Hydroxy derivatives, mercapto derivatives (nomenclature, the chemical properties and preparation).
6. Ethers, sulphides, and other sulphur derivatives - classification and nomenclature, (nomenclature, the chemical properties and preparation).
7. Nitrogenous derivatives of hydrocarbons (classification, nomenclature of basic types, their chemical properties and preparation).
8. Aldehydes and ketones (structure and nomenclature, the chemical properties and preparation).
9. Carboxylic acids and their function and substitution derivatives (structure and nomenclature, the chemical properties and preparation).
10. Heterocyclic compounds (classification, nomenclature, and structure, the chemical properties and reactivity of basic representatives).
11. Enzymes and their classification, conditions of enzymatic catalysis. 12. Respiratory chain, aerobic phosphorylation in the connection with Krebs cycle.
13. Amino acids and proteins, their structure and properties, the important representatives.
14. Saccharides and the glycogen metabolism.
15. Photosynthesis, the pentose cycle, gluconeogenesis.
16. Lipides and their metabolism - the chemical structure of lipids, the lipids degradation, lipophilic enzymes.
17. Coenzymes, their structure and functions, the most representatives. Vitamins - classification, functions.
18. Nucleic acids, their structure and functions, bases of genetics.
19. Porphyrins, cytochromes, chlorophylls, heme.
20. Aerobic and anaerobic degradation of saccharides.

Requirements on student

Evaluation of the subject as well as the exam grading is made according to the articles No 31 - 33 in the Regulations on Study and Examinations University of Ostrava

Content

Organic chemistry and biochemistry.

Prerequisites - other information about course preconditions

The student must gain at least 180 credits during the study in the subjects stipulated by the curriculum of the degree specialization.

Competences acquired

Competences

The students orientate in the organic chemistry and biochemistry problems.

They can use and integrate acquired knowledge in the chemical problems solving.

Fields of study

Guarantors and lecturers

- **Guarantors:** doc. RNDr. Václav Slovák, Ph.D.

Literature

Time requirements

Activities	Time requirements for activity [h]
Self-tutoring	15
Preparation for an exam	95
Consultation of work with the teacher/tutor (incl. electronic)	10
Total:	120

assessment methods

professional knowledge

Oral examination

learning outcomes

professional knowledge - knowledge resulting from the course:

Competences

The students orientate in the organic chemistry and biochemistry problems.

They can use and integrate acquired knowledge in the chemical problems solving.

Course is included in study programmes:

Study Programme	Type of	Form of	Branch	Stage	St. plan v.	Year	Block	Status	R.year	R.
Chemistry	Bachelor	Full-time	Chemistry	1	2012	2016	Povinné předměty	A	3	LS