SYLLABUS

1. Course title:

ORGANIC CHEMISTRY I

2. Code:

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester:

1 3

9. Weekly contact hours:

9.1. Lectures: 4

9.2. Seminars: 0

9.3. Laboratory/Practice classes: 2

10. Faculty:

Faculty of Pharmacy

11. Department/study program:

Pharmacy (integrated academic study I and II cycle)

12. Lecturer:

Dr. sc. Majda Srabovic, full professor

13. Lecturer's e-mail:

majda.srabovic@untz.ba

14. Web site:

www.frmf.untz.ba

15. Course aims:

Introduction to the general principles of organic chemistry, acquiring knowledge about the structure, physical and chemical properties, bond formation, and electronic effects of organic compounds. Introduction to the basics of stereochemistry and types of isomerism. Acquisition of knowledge about types of organic compounds and learning about reaction mechanisms characteristic of organic compounds, as well as their application in pharmacy.

16. Learning outcomes:

After passing the exam, the student will be able to describe the bonds that form organic molecules, classify organic compounds, and recognize the stereochemical properties of molecules. Furthermore, the student will be able to analyze basic reaction mechanisms, understand and predict the products of organic reactions. Finally, based on the above, he will be able to plan the synthesis of organic compounds and the synthesis of drugs. The student will be able to analyze the properties of a drug based on its structure and predict the type of interaction with the active site based on the functionality of the compound.

17. Course content:

Structure and isomerism of organic molecules. Types of bonds in organic compounds, hybridization of orbitals, electronic effects, stereochemistry, chirality and optical activity. Saturated hydrocarbons (alkanes, cycloalkanes) and the mechanism of radical substitution. Unsaturated hydrocarbons (alkenes, alkynes, conjugated compounds) and the mechanism of electrophilic addition. Aromatic compounds and the mechanism of electrophilic aromatic substitution. Alkyl-, alkenyl-, and aryl-halides, structure, reactivity, mechanisms of substitution and elimination reactions. Alcohols and related compounds, structure, substitution and elimination reactions. Amines and related compounds, structure, reactions. Carbonyl compounds-structure, reactivity. Aldehydes and ketones nucleophilic addition reactions. Carboxylic acids and carboxylic acid derivatives. Mechanism of nucleophilic substitution of carboxylic acids and carboxylic acid derivatives, and compounds with a cyano group. Heterocyclic compounds, structure, reactions and importance of heterocyclic compounds in pharmacy.

18. Learning methods:

Lectures, laboratory exercises (L), colloquium, consultations.
Lectures - through interactive lectures to introduce students to the basic concepts and principles of organic chemistry, and through practical examples and problems to apply theoretical foundations
Experimental exercises - Connecting theoretical knowledge with practical application in the laboratory.

19. Assessment methods:

The exam is in written (Test I and II)
Final exam - through written/oral knowledge testing, the student can achieve a maximum of 30 points

Knowledge check - criteria

Criteria	Max number of points	Points for passing
Regularity of class attendance	10	6
Lab exercises engagement	16	9
Colloquiums		
Tests during the course:		
Test I (written)	22	12
Test II (written)	22	12
Final exam (written/oral)	30	16
Total	100	55

20. Assessment components:

< 55	5	F
55– 64	6	E
65– 74	7	D
75 – 84	8	C
85– 94	9	B
95 - 100	10	A

21. Required reading list:

1. Organska hemija (prevod),Pine S.H.,Školska knjiga Zagreb, 1994
3. Eksperimentalna organska hemija sa teoretskim osnovama, J.Suljagić, Z. Ademović, S. Marić, InScan 2017
4.Nomenklatura organskih spojeva, S. Marić, E. Horozić, J.Suljagić, InScan 2019

22. Web sources:

https://iupac.org/
Organic Chemistry , Janice Gorzynski Smith, McGraw-Hill; 6rd edition, 2019 (pdf)

23. Applicable starting from the academic year:

2023/2024.

24. Adopted in the Faculty/Academy session:

17.11.2025.