SYLLABUS

1. Course title:

DRUG DESIGN AND MODELING

2. Code:

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester:

1 5

9. Weekly contact hours:

9.1. Lectures:	2
9.2. Seminars:	0
9.3. Laboratory/Practice classes:	0

10. Faculty:

Faculty of Pharmacy

11. Department/study program:

Pharmacy (integrated 1st and 2nd cycle)

12. Lecturer:

dr.sc. Amra Džambić, assistant professor

13. Lecturer's e-mail:

amra.dzambic@untz.ba

14. Web site:

www.frmf.untz.ba

15. Course aims:

Students are introduced to the basics and the importance of the relationship between the structure of drugs and their properties, ie activity (QSAR).
Special attention is paid to the determination and prediction of physico-chemical properties as parameters in the development of new drugs. Students are introduced to the advantages and disadvantages of methods in the research of new drugs, identification of pharmacophores, simulation of binding of ligands to receptors, etc.

16. Learning outcomes:

Students are introduced to the methods that are used with the aim of obtaining drugs with better physico-chemical properties and activities.

17. Course content:

Basic principles of QSPR; QSAR research, graph theory, molecular descriptors, physical and chemical properties of compounds with special reference to the partition coefficient, statistical data processing, identification of pharmacophores and auxophores, bioisosteres, Docking studies-application, significance; DFT studies; target sites of drug action.

18. Learning methods:

Lectures - theoretical classes, seminar papers. Practical work.

19. Assessment methods:

The exam consists of a written part (Test) and a seminar paper. In order to pass, it is necessary to obtain at least 55 points (55%) from each individual criterion.

The final grade is formed on the basis of the presented criteria:

Criteria	Min. no. of points	Max. no. of points
Regularity of class attendance	2.5	5
Practical work and activity during practical work	5.5	10
Seminar paper	14	25
Test	33	60
Total	55	100

20. Assessment components:

The final grade consists of attendance and active participation in classes (lectures and practical work), a seminar paper and a test.

< 55.00	5 F
55.00 – 64.99	6 E
65.00 – 74.99	7 D
75.00 – 84.99	8 C
85.00 – 94.99	9 B
95.00 – 100	10 A

21. Required reading list:

Silverman R B, The Organic Chemistry of Drug Design and Drug Action, second edition, Elsevier 2004; Carloni P, Alber F. Quantum Medical Chemistry, Wiley-VCH Verlag Gmbh & Co. KgaA Weinheim, 2003;

22. Web sources:

23. Applicable starting from the academic year:

2018/2019

24. Adopted in the Faculty/Academy session:

17.11.2025.