SYLLABUS

1. Course title:

CANCER BIOCHEMISTRY

2. Code:

3. Cycle of study:

1

4. ECTS credits:

2

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester:

1 7

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:

Adaleta Softić, full professor

13. Lecturer's e-mail:

adaleta.mulaomerovic@untz.ba

14. Web site:

www.frmf.untz.ba

15. Course aims:

The aim of this course is to acquire knowledge about the causes of cancer, environmental factors that contribute to the development of this disease, the molecular and genetic basis of cancer development, the biochemistry of malignant cells, the body's immune response to a tumor, methods of diagnosis, treatment and prevention.

16. Learning outcomes:

At the end of the semester/course, successful students who have consistently fulfilled their obligations throughout the entire teaching period will be able to:
Based on the acquired theoretical knowledge, students are expected to be familiar with the basic molecular mechanisms of cancer development, the biochemistry of malignant cells, the significance of oncogenes and tumor suppressor genes in the onset and progression of cancer, and the molecular basis of angiogenesis and metastasis, providing a basis for understanding the mechanisms of action of anti-tumor therapy.

17. Course content:

Characteristics of human cancer. Causes of cancer. Epidemiology of human cancer. Biochemistry and cell biology of cancer. Molecular genetics of cancer. Angiogenesis and metastasis of cancer. Tumor immunology. Cancer diagnosis. Consequences of cancer. Cancer therapy. Cancer prevention.

18. Learning methods:

Students attend the course "Biochemistry of Cancer" which consists of 30 hours of theoretical classes and seminars. Mandatory attendance at lectures and active participation in discussions based on previously acquired knowledge.

The student's seminar work is mandatory as a group team project.

19. Assessment methods:

Knowledge acquired in theoretical classes will be assessed through a written test, through activity and discussion during the lectures themselves (by recording the knowledge acquired in theoretical classes and awarding points as in-class activity), and through a team seminar paper.The test is written and consists of essay-type questions, questions requiring students to write the requested answers and interpret them, and filling in data in designated places within a schematically presented process. The final exam is a test intended for students who did not pass during the course of the semester.
The final grade is formed based on the sum of points earned from the midterm test, the seminar paper, class attendance, and in-class activity.Formation of the final grade:On the basis of regular class attendance, it is necessary to obtain a minimum of 3 points. The maximum number of points on this basis is 7.The student is required to obtain a minimum of 2 points through continuous activity during classes. The maximum number of points on this basis is 8.A passed test is considered to be one with at least 42 points. The maximum number of points that can be achieved on the test is 70.A successfully prepared and defended seminar paper is graded with up to 15 points, while a minimum of 8 points must be obtained.
Points earned on all bases defined in the syllabus are added together, and the (final) grade is formed based on the total number of points.

20. Assessment components:

< 55	5 (F, FX) - does not meet the minimum criteria
55 - 64	6 (E) - meets the minimum criteria
65 - 74	7 (D) - generally good, but with significant shortcomings
75 - 84	8 (C) - average, with noticeable errors
85 - 94	9 (B) - above the average, with some errors
95 - 100	10 (A) - outstanding performance without errors or with minor errors

21. Required reading list:

1. Ruddon W Raymond, Cancer Biology, Oxford University Press Inc., New York, 2007
2. Adaleta Softić - authorized lectures

22. Web sources:

23. Applicable starting from the academic year:

2023/2024.

24. Adopted in the Faculty/Academy session:

17.11.2025.