SYLLABUS

1. Course title:

Cell biochemistry

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester:

1 II

9. Weekly contact hours:

9.1. Lectures:	2
9.2. Seminars:	1
9.3. Laboratory/Practice classes:	0

10. Faculty:

Faculty of Pharmacy

11. Department/study program:

(max. 100 characters)

12. Lecturer:

Ph.D. Aida Smajlović, associate professor

13. Lecturer's e-mail:

aida.krijestorac@untz.ba

14. Web site:

15. Course aims:

The aim of this course is to acquire knowledge about the fundamental relationship between the structure and function of membrane proteins. Investigate the molecular mechanisms involved in signal transmission and the ability to modulate signal pathways for therapeutic purposes. To gain knowledge about the structure of secretion vesicles, cell signal transmission, signal transduction in the vessel, nuclear pore structure, ways and control of cellular motion and shape, cell cycle regulation and cellular cells and multicellularity, programmed cell death, and the ability to apply animal cell cultures to For research and laboratory purposes.

16. Learning outcomes:

- acquire theoretical knowledge of the relationship between the structure and function of integral membrane proteins involved in different types of membrane transport through the membrane, in order to modulate signal pathways for therapeutic purposes.
- acquire theoretical knowledge of signal transmission through the sail, cell cycle regulation, cell shape and mobility, cellular cells and the concept of multicellularity.
- become acquainted with the application of animal cell cultures in order to efficiently apply these systems for research and diagnostic purposes

17. Course content:

- Dynamics, structure and organization of biological membranes. Cytoskeleton. Extracellular matrix.
- Types of transport through the membranes. Sorting proteins into membranes and organelles.
- Cell signal transmission or transduction of small molecules and ions
- Signal transmission in the nucleus, nuclear dust, chromatin
- Mobility of the cell (actin, myosin) and control of the cellular shape
- Cell cycle regulation of protein kinases
- Cell stem cells, cell death, multicellularity
- Oncogene. Tumor suppressor genes and programmed death cells.
- Possibilities of application of animal cell cultures as well-defined live sequences for research and diagnostic purposes.
- Seminar papers. Mini Symposium (Biochemical Cells)

18. Learning methods:

Lectures, seminar papers
Teaching subjects. The cell biochemistry has a fund of 30 hours of theoretical instruction and seminars.
Students are obliged to attend lectures and participate actively in them through discussion.
Seminar work is mandatory as a team team project.

19. Assessment methods:

Lecture (P): attendance at all lectures: 5 points
Presence> 95%: 3 points
The student actively participates in the lecture during the lecture. During the course of the lecture, the activity can achieve a maximum of 10 points. Based on the activity of the lecture, it is obligatory to collect a minimum of 2 points.
During the semester, the student completes 2 tests (2 partial examinations), which include the complete theoretical lecture from the subject of the Biochemistry Cell. Particulates include theoretical teaching in the area of structure and organization of prokaryotic and eukaryotic cells, biological membrane structures, cytoskeletons, extracellular matrices, membrane types and membrane transport, protein sorting in membranes and organelles, while Part II includes: cell signal transmission, transmission Cellular cell control and cellular control, cell cycle regulation, cellular cell, cell death, oncogenes, tumor suppressor genes and cell culture used for research and laboratory purposes. Each test carries a maximum of 35 points. The minimum number of points that must be scored on the test is 21.
During the semester a student is working (final exam), which includes theoretical teaching from the subject of the Biohemium Cell, and refers to the test of the test I and the test II tests from theoretical classes which are not passed in regular terms, ie where minimal points have not been achieved.
Seminar work of a student: a student is obliged to do one seminar work as a group project. Successfully prepared and defended seminar work is evaluated with a maximum of 15 points. The minimum number of credits required to complete the seminar is 8 points. The number of credits obtained on the basis of the conducted seminar work is calculated by the total number of points achieved on other bases in the (final) grade.

20. Assessment components:

Score	Rating (BiH)	(ECTS Rating)
<54	5	F
54 - 63	6	E
64 - 73	7	D
74 - 83	8	C
84 - 93	9	B
94 - 100	10	A

21. Required reading list:

1. Authorized lectures
2. Lehninger A L, Nelson D L, Cox M M, Principles of Biochemistry, Worth Publishers, New York, 2005.
3. Ernst J.M.Helmreich, The Biochemistry of Cell Signaling, Oxford University Press Inc., New York, 2001.

22. Web sources:

(max. 687 characters)

23. Applicable starting from the academic year:

2012/2013

24. Adopted in the Faculty/Academy session:

(max. 10 char.)