SYLLABUS

1. Course title:

PHYSIOLOGY

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. Farid Ljuca, full professor

13. Lecturer's e-mail:

farid.ljuca@untz.ba

14. Web site:

www.frmf.untz.ba

15. Course aims:

Acquaintance of students of the Faculty of Pharmacy with the basic physiological mechanisms of functioning at all levels of the functional organization of the human body, which masters of pharmacy should know.

16. Learning outcomes:

Successful students, who continuously performed their duties during the entire teaching period and passed the exam, will master the knowledge of the basic mechanisms of the functioning of the human body for the Master of Pharmacy level.

17. Course content:

Module 1
Functional organization of the human body. Body fluids and homeostasis. Membrane potentials. Physiology of muscles. Hematopoiesis. Physiology of erythrocytes. Hemostasis. Physiology of leukocytes and the immune system. Cardiac cycle, cardiac output, mean arterial pressure and their regulation. Capillary dynamics. Pulmonary ventilation. Diffusion of gases across the respiratory membrane. Transport of oxygen and carbon dioxide by the blood. Regulation of respiration. Glomerular filtration, tubular reabsorption and tubular secretion. Regulation of acid-base status. Clearances.
Module 2
Functional organization of the nervous system. Nerve synapses and neurotransmitters. Somatic and sensory perceptions. Motor functions of the spinal cord, brainstem, cerebellum and cerebrum. Physiology of the autonomic nervous system. Functions of the pituitary, thyroid, parathyroid, adrenal and gonadal glands. Physiology of insulin and glucagon. Motility, secretion and absorption in the gastrointestinal tract – mechanisms and their regulation. Thermoregulation.

18. Learning methods:

Lecture and laboratory exercises.
During the entire semester, the student is obliged to attend lectures (L) and laboratory exercises (LE) regularly. During the entire semester, the teacher will monitor the attendance of students on a specially created form. During the semester, a student can be excused for a maximum of 20% of practical and theoretical classes.

19. Assessment methods:

Written or oral methods are used to check acquired knowledge in the subject Physiology.

Pre-exam activities are worth 50 points:
- attendance at lectures and exercises 5 points
- continuous test of knowledge 45 points, namely:
colloquium from exercises 5 points and 40 points content of Module 1 (general physiology, physiology of the cardiovascular, respiratory and urinary systems).

The final exam is worth 50 points and is realized by passing the content of Module 2 (physiology of the nervous, endocrine and digestive system)

The final exam is taken after the third semester.

20. Assessment components:

Student obligations	Points
Attendance at lectures and exercises	5 points
Practical classes colloquium	5 points
Test 1 (content of Module 1)	40 points (minimum 21)
Final exam (content of Module 2)	50 points (minimum 26)

Points	Grade
95–100	Ten (10) A
85–94	Nine (9) B
75–84	Eight (8) C
65–74	Seven (7) D
55–64	Six (6) E
<55	Five (5) F

21. Required reading list:

2. Farid Ljuca (urednik) i saradnici. Fiziologija čovjeka. Zvornik, Eurografika, 2010.
3. Farid Ljuca. Praktikum iz fiziologije , "OFF-SET" Tuzla, 2018.

22. Web sources:

23. Applicable starting from the academic year:

2023/2024.

24. Adopted in the Faculty/Academy session:

17.11.2025.