SYLLABUS

1. Course title:

Mathematics

2. Code:

3. Cycle of study:

1

4. ECTS credits:

7

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

-

7. Class restrictions:

-

8. Duration / semester:

1 1

9. Weekly contact hours:

9.1. Lectures:	3
9.2. Seminars:	4
9.3. Laboratory/Practice classes:	0

10. Faculty:

Faculty of Pharmacy

11. Department/study program:

Phrarmacy (integrated 1st and 2nd cycles)

12. Lecturer:

Dr. sc. Zehra Nurkanović, full professor

13. Lecturer's e-mail:

zehra.nurkanovic@untz.ba

14. Web site:

15. Course aims:

To learn math concepts and methods necessary in further professional work of students, train the students' logical and visual thinking, and to create preconditions for creative problem solving.

16. Learning outcomes:

After completing the course, the student will
• Develop a sense of deductive reasoning;
• Acquiring the criteria for testing the convergence of various border processes and means of limit value.
• Gain an impression of the role that the process of linearization has in mathematical modeling;
• master the technique of differential calculus of functions of one real variable;
• Using examples from mathematics, physics, natural and social sciences, to feel the potential of differential and integral calculus to solve specific problems.

17. Course content:

Elementary algebra. Percentage account and proportions.
Matrices. Determinants. Systems of linear equations. Vector algebra.
Functions: definition, basic properties, domains, condoms, the inverse function graph. Elementary functions: a linear function, power function, trigonometric functions, exponential and logarithmic functions.
Elements of differential calculus: limits, continuity, the extent and speed of change, slope, definitions and interpretations of statements, rules of differentiation.
The use of copy: monotonicity, convexity, Taylor polynomial approximation function.
The elements of integration: Integration as the inverse operation of differentiation. Rules and integration techniques.
The definition of definite integral, geometrical and physical interpretation. Newton-Leibniz formula.
The use of integrals: Area and volume, movement, numerical integration.
Functions of several variables: Partial derivatives, extreme values. Least Squares Method.
Ordinary differential equations: some equations of the first order, linear equations of higher order with constant coefficients.

18. Learning methods:

Planned the following activities for learning: concrete experience, observation and reflection, making abstract concepts. As learning styles are preferred: visual style, logical-mathematical and independent.
The most significant learning methods in the course are:
- Lectures, active learning techniques and with the active participation and discussion of students;
- Auditory exerc

19. Assessment methods:

Throughout the course, two tests will be administered (Test 1 and Test 2). Test 1 will cover the content learned in the first third of the entire course, and Test 2, will cover the second third of the content covered. These tests consist of problems that carry 30 points (a total of 60 points). After completion of the course, students take the final exam (if at least 30 points have been acquired), which include problems from the last third of the course content and the theory of the entire material. The Final exam carries a total of 40 points. If a student did not acquire the minimum number of points, then at the finals, he/she will retake either Test 1 or Test 2.
By attending class and participating, the student may receive a maximum of 5 points. The exam is considered passed if the student has received in all areas of the test a score of more than 53 points.
Re-taking the exam consists of correcting Test 1 or Test 2 at finals. If the student has acquired more points the second time around than the first time, the second score will count towards the final grade.

20. Assessment components:

The following is the grading scale, showing the points, numerical grade, descriptive grade and letter grade:
0-53 5 (five) fail F
54-63 6 (six) satisfactory E
64-73 7 (seven) good D
74-83 8 (eight) very good C
84-93 9 (nine) excellent B
94-100 10 (ten) outstanding A

21. Required reading list:

1. M. Nurkanović i Z. Nurkanović, Elementarna matematika – Teorija i zadaci, Printcom, Tuzla, 2010.
2. Sabahet Drpljanin: Matematika, Tuzla, 1997.
3. Mehmed Nurkanović, Omer Kurtanović: Matematika za ekonomiste, Printcom, Tuzla, 2013.

22. Web sources:

http://www.mathos.unios.hr/images/uploads/260.pdf

23. Applicable starting from the academic year:

2012/13

24. Adopted in the Faculty/Academy session: