SYLLABUS

1. Course title:

Mathematics II

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 2

9. Weekly contact hours:

9.1. Lectures:	3
9.2. Seminars:	2
9.3. Laboratory/Practice classes:	0

10. Faculty:

Faculty of Technology

11. Department/study program:

Chemical engineering and technologies

12. Lecturer:

dr. sc. Sanela Halilović, assistant professor

13. Lecturer's e-mail:

sanela.halilovic@untz.ba

14. Web site:

www.pmf.untz.ba

15. Course aims:

The main aim is for students to acquire basic knowledge from the field of higher mathematics, in order to be prepared for other courses and lectures where the certain knowledge of mathematics is required.

16. Learning outcomes:

At the end of semester the successful students will be equipped for:
-solving various mathematical problems
-applying differential and integral calculus in practice
After the exam of this course is successfully passed students will easier absorb the contents of other courses which have something in common with mathematics.

17. Course content:

The limit value of a function of one variable. Continuity of a function of one variable. Differential calculus in one variable functions (the concept of the first derivative, geometric and physical interpretation of the first derivative, properties of differentiable functions, rules of differentiation, chain rule - the derivative of composite functions, logarithmic derivative, derivative of parametric functions , differential of a function, basic theorems of differential calculus, L'Hospital's rule). The application of differential calculus on determining the intervals of increase and decrease. Functions with more than one variable (limit values, continuity and differentiability with application in solving extremal problems). Integral calculus of functions with one variable (the concept of an indefinite integral, integration by substitution and integration by parts, the integration of rational, irrational and trigonometric functions). Basic theories of differential equations (Solving linear differential equations of the first and second order). Introduction to the theory of probability and statistics.

18. Learning methods:

The most significant methods of learning are:
- Lectures and the technique of active studying with active participation and discussion of students.
- Lessons where students solve exercises problems independently or with the help of a teaching assistant.
- Consulting classes

The students are obliged to attend minimally 80 % of lecture classes in order to be allowed for taking the exam.

19. Assessment methods:

Assessments are taken in written or oral form.
During the semester students are supposed to take two tests (Test I and Test II) with exercise tasks including the covered teaching material up to that time. Final exam may consist of assessment in both forms (written and oral).

20. Assessment components:

The exam mark is based on the total amount of points that student gain out of maximum of 100 points, and it is determined according to the following rating scale:
-Test 1- from 0 to 25 points
-Test 2- from 0 to 25 points
-The final exam- from 0 to 50 points.

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. Drpljanin S., Matematika, Univerzitet u Tuzli, 1997.
2. R. Vugdalić, Diferencijalni i integralni račun, Tuzla, 2009.
3. F. Vajzović, M. Malenica, Integralni račun funkcija više promjenljivih, Univerzitetska knjiga, Sarajevo, 2009.

22. Web sources:

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session: