SYLLABUS

1. Course title:

Mathematics I

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 1

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. Ramiz Vugdalić, Associate Professor

13. Lecturer's e-mail:

ramiz.vugdalic@untz.ba

14. Web site:

www.pmf.untz.ba

15. Course aims:

-to enable students to gain elementary knowledge from the field of higher mathematics
-to develop a sense in students for a logical and visual understanding of phenomena, problems and figures in space
-to obtain necessary knowledge from linear algebra with the aim of applying it on solving systems of linear equations
-acquire basic knowledge from the area of vector algebra and analytical geometry and their applications.

16. Learning outcomes:

At the end of course/semester, successful students will :
- get the knowledge from new areas of mathematics
-expand the knowledge from some areas of higher mathematics
-get to know the basics of linear algebra (i.e. the theory of matrices and determinants) and be able for their application in solving the systems of linear algebraic equations
- be able to apply some parts of lecture´s content on some technical problems, for example the field of vector algebra.

17. Course content:

Algebra of propositions and algebra of sets. Relations, functions and basic algebraic structures. The set of natural numbers, the set of integers, the set of rational numbers and the set of real numbers. Complex numbers. Matrices and determinants. Solving systems of linear algebraic equations. Basic concepts of vector algebra and their application. Numerical sequences, limit of numerical sequences. Numerical series, the criteria for convergence of numerical series.

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.

The following activities of successful learning are planned: observation and deliberation, creating abstract concepts and generalization. Planned styles of learning: logical-mathematical, visual, auditory and verbal.

19. Assessment methods:

After the first half of the semester students are taking Test 1 with tasks including the covered teaching material up to that time. At the end of the semester students are taking Test 2 with tasks including the covered teaching material from the second part of the semester. Each test carries up to 25 points, i.e. Test 1 and Test 2 together carries a maximum of 50 points. These pre-exam obligations will be taken in written form. The final exam carries a maximum of 50 points. Testing of all parts of the exam knowledge are accepted as a cumulative exam. The exam is considered passed if the student wins at least 54 cumulative points. A student, who does not make the minimum points, takes the make-up exam, at which he/she can correct each of before mentioned parts of the exam. The make-up exam is considered passed if the student wins at least 54 cumulative points.

20. Assessment components:

Test 1 0-25 points; Test 2 0-25 points.
Final exam 0-50 points.
Total 100 points.

Grade 6 (E) 54-63 points
Grade 7 (D) 64-73 points
Grade 8 (C) points 74-83
Grade 9 (B) 84-93 points
Grade 10 (A) 94-100 points.

21. Required reading list:

1. Ramiz Vugdalić, Matematika I, Tuzla, 2014.
2. Branislav Stojanović, Zbirka zadataka iz matematike, Sarajevo, 1981.

22. Web sources:

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session: