

SYLLABUS

1. Course title:

MATHEMATICS II

2. Code:

3. Cycle of study:

4. ECTS credits:

5. Type of course:

☒ Mandatory ☐ Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester:

9. Weekly contact hours:

9.1. Lectures:

9.2. Seminars:

9.3. Laboratory/Practice classes:

10. Faculty:

Faculty of technology

11. Department/study program:

Food Technology

12. Lecturer:

Mirela Garić-Demirović

13. Lecturer's e-mail:

mirela.garic@untz.ba

14. Web site:

www.pmf.untz.ba

15. Course aims:

The main goal of this module is to give students the basics in the field of mathematics, in order to be better prepared to listen to other disciplines in the courses that are directly or indirectly rely on mathematics.

16. Learning outcomes:

At the end of the semester / course successful students, which continuously perform their duties during the entire period of teaching , will be able to:

- solve a variety of problems,
- apply knowledge of differential and integral calculus in practice.

After successful completion of the course students will certainly easier and faster to acquire knowledge of the modules that are fully or partially rely on mathematics.

17. Course content:

The real function of one variable.

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 of the function. 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). Definite integral. Application of the definite integral.

18. Learning methods:

Lectures, exercises and consultations: Students are required to attend all classes and exercises. The condition for obtaining signature is a minimum of 80% attendance to lectures.

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. It consists of 5 tasks by 5 points, a total of 25 points. 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. It consists of 5 tasks by 5 points, a total of 25 points. All students are supposed to take Test 1 and Test 2 at the same time, which enables equality of the level of testing knowledge and conditions of testing, too. Students take the final exam in writing form by answering four questions. The exam is considered passed if the student answers correctly on three questions. 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.

20. Assessment components:

The exam mark is based on the total amount of points the student has gained by doing pre-exam tasks and by doing the exam, and also based on the quality of gained knowledge and skills. The grade contains a maximum of 100 points, and it is determined based on 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.

21. Required reading list:

1. S. Drpljanin, Matematika, Tuzla, 1997.
2. Čamila Ljubović, Senada Kalabušić, Matematika za bruce, Sarajevo, 2007.
3. Dragan Jukić, Rudolf Scitovski, Matematika I, Osijek, 1998.

22. Web sources:**23. Applicable starting from the academic year:**

2015/16

24. Adopted in the Faculty/Academy session:

(max. 10 char.)