SYLLABUS

1. Course title:

PHISICO-CHEMICAL METHODS OF SOIL ANALYSIS

2. Code:

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

No prerequisites

7. Class restrictions:

No class restrictions

8. Duration / semester:

1 4

9. Weekly contact hours:

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

10. Faculty:

Faculty of Technology

11. Department/study program:

Agronomy

12. Lecturer:

Amra Odobašić, associate professor

13. Lecturer's e-mail:

amra.odobasic@untz.ba

14. Web site:

www.untz.ba

15. Course aims:

Introducing students with physico-chemical properties of the soil and methods of physical and chemical analysis and characterization of the soil: conductometry, volumetry, potentiometry, electrogravimetry, X-ray, spectrometric analysis (flame photometry, AAS and ICP), thermal methods, separation methods.
Students gain insight into all the requirements and steps for carrying out experiments and processing results.

16. Learning outcomes:

At the end of the semester / course, successful students will be able to create a clearer picture of the structure and physico-chemical components of the soil, to identify the chemical and mineralogical composition of the soil, to apply knowledge in soil quality labs using the above methods (determination of necessary micro and macro elements , determination of toxic elements).
Through practical exercises that are conceived in the form of short research experiments, students should acquire autonomy in solving practical problems.

17. Course content:

The course Physico-chemical methods of soil analysis applies existing methods in defining soil quality and constant control of the same in an effort to influence the increase of agricultural production and equalize the yield per unit area, on the basis of the obtained experimental results.
Methods of analysis imply the determination of basic parameters of soil quality by different methods, application of methods for the analysis of organic and inorganic pollutants, comparison of multiple methods, classification of soil on the basis of analysis results, application of methods for the analysis of organic and inorganic pollutants, comparison of several methods, classification of soil on the basis of analysis results, ie. the determination of the dependence between the results of the chemical analysis of soil and soil use, for the purpose of assessing the fertilization and the type of fertilization ie. the fertilization system.

18. Learning methods:

For the purpose of efficient teaching and achievement of the course objectives and competences of the students at the end of the semester, different curricular methods are used:
- lectures with the use of multimedia resources, active learning techniques and with active participation and discussion of students;
- practical (Laboratory) Exercises
- consultations

19. Assessment methods:

For a continuous activity on lectures and exercises throughout the semester, the student can achieve 0 to 5 points. Student activity is determined by engagement in the teaching process, by monitoring and active participation in lectures and exercises. For attendance at lectures and exercises during the semester a student can earn 0-5 points. The maximum number of 5 points get students who were not, or were absent one time, 4 points get students who were absent 2 times, 3 points get students who were 3 times absent and students who were more than three times absent have no right to verify the course by the subject teacher and therefore are not eligible for points. After half of the semester, students take the writing test (first partial exam) which includes previously treated topics with lectures and exercises. The test consists of the definition of terms, multiple choice, supplementation, linkage, graphic representation. Each correct answer is scored with the amount of points that depends solely on the complexity of the question. The obtained points on the test are summed up and converted into the number of points provided by the syllabus, or more precisely, the student can achieve a maximum of 20 points on the first test. After completing the semester, students take the writing test (second partial exam), which covers the topic covered by the lectures and exercises from the second part of the semester. The test consists of the definition of terms, multiple choice, supplementation, linkage, graphic representation. Each correct answer is scored with the amount of points that depends solely on the complexity of the question. The student on the second test can achieve a maximum of 20 points. All students take both tests on the subject at the same time, thereby achieving uniformity of the level of knowledge that is being tested, as well as the conditions under which the student takes the exam. Output colloquium carries 10 points, and the minimum for passage is 6. The final exam is written and the student can achieve a maximum of 40 points and in order to pass the exam, it is necessary to win above the half of the total number of points - 21.
In order to pass a course, student must have a minimum of 54 cumulative points, out of which at least 26 points on the final exam.

20. Assessment components:

Criterion	Max number of points	Points for passage
Attendance at class	5	3
Activity	5	3
I partial exam	20	11
II partial exam	20	11
Output colloquium	10	5
Final exam	40	21
Total	100	54

21. Required reading list:

- An internal script prepared by the course teacher with the content of the lectures.
- Đurkić T., Grujić S. Laušević M. Metode analize zagađujućih materija. Beograd, 2015.
-Ankica A.J. Atomska spektroskopija, udžbenici Fizičke hemije, Beograd, 2006

22. Web sources:

23. Applicable starting from the academic year:

2016/2017

24. Adopted in the Faculty/Academy session: