SYLLABUS

1. Course title:

ANALYTICAL CHEMISTRY II

2. Code:

3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

Student does not have to pass any subject before this

7. Class restrictions:

No restrictions

8. Duration / semester:

1 3

9. Weekly contact hours:

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

10. Faculty:

Faculty of Farmacy

11. Department/study program:

Pharmacy (integrated 1st and 2nd cycle)

12. Lecturer:

Dr.sc. Mersiha Suljkanović

13. Lecturer's e-mail:

mersiha.suljkanovic@untz.ba

14. Web site:

www.farmacy.untz.ba

15. Course aims:

- introducing the basics of quantitative analytical methods (gravimetry, volumetry, separation techniques, spectrometric measurements, etc.)
- highlight the correlation between the measured analytical feature and quantitative indicator of analyte
- connect theoretical knowledge and practical application
- learn to perform experiments (individually or through team work) in order to solve problems and tasks in analyte quantification

16. Learning outcomes:

After succesfully finalizing the learning process, it is expected that student is able to:
- carry out all calculations related to experiment organization: preparation of solutions, selection of appropriate concentration field of analyte, adjustment of all parameters related to specific analysis
- skillfully perform the experiment
- discuss and explain gained results (graphic and mathematical explanation)
- evaluate obtained results by using the statistical methods, from aspect of different analytical parameters: sensitivity, precision, selectivity, accuracy, reproducibility, etc.

17. Course content:

Introduction to quantitative analysis.
Classical methods of analysis:
- gravimetry (individual element determination and mixture quantification), types of gravimetric precipitates and their impurities, removal of impurities, calculations in gravimetry
- volumetry: neutralization titrations (alkalimetry and acidimetry), complexometric titrations (hardness of water), precipitation titrations (argentometry), redox titrations (permanganometry, iodatometry, dichromatometry, bromatometry, iodometric, titrations by iodine)

Introduction to instrumental analysis:
- basics of potentiometric titrations
- basics of UV/VIS spectrophotometry

18. Learning methods:

- Lectures
- Laboratory practice
- Consultation

19. Assessment methods:

After the first third of semester, the first test is held. This test covers topics from previous lectures and contains calculation tasks and theoretical questions. Student can achieve maximum of 20 points at this test.
After the second third of semester, the second test that covers topics from lectures at this period of semester, is held. Second test also contains calculation tasks an theoretical questions and maximum number of points here is also 20.
For continuous activity (attendance) during lectures through the semester, student can achieve maximum of 10 points.
After the end of semester, the final exam is held, which covers topics from remained lectures. Final exam contains theoretical questions and maximum number of points is 20.
During the semester, it is required that student pass two colloquiums, with maximum of 10 points from each of them.
Knowledge assesment of all kinds are recognized as cumulative exam only if the achieved result is positive after every individual test.

20. Assessment components:

Rating is based on the accumulated points from pre-exam activities and tests, according to quality of aquired knowledge and skills. Student can achieve maximum of 100 points, according to following scale:

Student obligations	Points
Attendance	10
Activities	10
Colloquia	20
Tests	40
Final exam	20

21. Required reading list:

1. Savić, J., Savić, M. (1990) Osnove analitičke hemije, Svjetlost, Sarajevo.
2. Skoog, D.A., West, D.M., Holler, F.J. (1999) Osnove analitičke hemije, Školska knjiga Zagreb.
3. Daniel. C. Harris. (1999) Quantitative Chemical Analysis, W.H. Freeman
4. D.Harvey, Modern analytical chemistry, McGraw-Hill Companies, 2000.

22. Web sources:

23. Applicable starting from the academic year:

2012/13

24. Adopted in the Faculty/Academy session:

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