SYLLABUS

1. Course title:

QUALITY MANAGEMENT IN ANALYTICAL LABORATORY

2. Code:

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

no course prerequisites

7. Class restrictions:

none

8. Duration / semester:

1 7

9. Weekly contact hours:

9.1. Lectures: 2

9.2. Seminars: 0

9.3. Laboratory/Practice classes: 1

10. Faculty:

Faculty of technology

11. Department/study program:

Chemical Engineering and Technologies

12. Lecturer:

Mirsad Salkić

13. Lecturer's e-mail:

mirsad.salkic@untz.ba

14. Web site:

www.tf.untz.ba

15. Course aims:

Developing theoretical understanding and practical skills for theoretical and practical problem solving in analytical laboratory.

16. Learning outcomes:

At the end of the semester successful students should be able to synthesize the acquired knowledge with the knowledge learned in other courses. The contents of this course should enable students to work in the laboratory independently.

17. Course content:

Bases of the concept of quality assurance in analytical laboratory. Quality assurance in analytical laboratory (good analytical practice, good laboratory practice, standard procedures). Sample and sampling. Sample preparation. Calibration methods. Characteristics of measurement procedure. Choice of methods for the determination of analyte. Estimation of measurement uncertainty. Validation of analytical methods. Standards and standardization.

18. Learning methods:

- lectures with students' active participation and discussion,
- practical laboratory work.

19. Assessment methods:

After one third of the semester, the students take the first mid-term test which includes the topics covered in the lectures. The test consists of theoretical questions. Maximum score in the first test is 30 points. After the second third of the semester, the students take the second mid-term test which includes the topics covered in the second third of the semester. The test consists of theoretical questions. Maximum score in the second test is 30 points. Students can score a maximum of 20 points for continuous activity in the lectures and practical laboratory work during the entire semester. At the end of the semester, students take a written final exam which covers the remaining topics from the lectures. The test consists of theoretical questions. Maximum score in the written final exam is 20 points.
All examination forms form part of the cumulative grade. Students pass the exam only if they pass each individual part of it.
The minimum requirement to pass the exam is 54 cumulative points

20. Assessment components:

The final grade is based on the total number of points before and during the exam. The maximum score is 100 points, and it is calculated according to the following:

Students' tasks	Points
Attendance	10
Laboratory work	10
Tests	60
Final examination	20

21. Required reading list:

1. Kaštelan-Macan M. (2003). Kemijska analiza u sustavu kvalitete. Zagreb: Školska knjiga.
2. De Bievre P., Guenzler H. (2005). Validation in Chemical Measurement, Berlin: Springer-Verlag.
3. Wenclawrak B.W., Koch M., Hadjicostas E. (2010). Quality Assurance in Analytical Chemistry.Berlin: Springer-Verlag.

22. Web sources:

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session: