SYLLABUS

1. Course title:

Metallic coating

2. Code:

054041B1-15

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

None

7. Class restrictions:

None

8. Duration / semester:

1 6

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:

Chemistry and Engineering of Materials

12. Lecturer:

Dr. Sci. Sead Ćatić, Full professor

13. Lecturer's e-mail:

sead.catic@untz.ba

14. Web site:

www.tf.untz.ba

15. Course aims:

The introduces students to the general principles of metal coatings and corrosion protection. The aim of the course is to acquire theoretical knowledge of metallic coatings and the method of their application on the substrate of diferent chemical compositions. Acquisition of basic knowledge necessary for independent execution and control of the galvanic process.

16. Learning outcomes:

The student has got basic theoretical knowledge about metal coatings, application methods and metal coating properties.
The student learned the types of growth and the conditions under which the metal coatings are obtained depending on their application.
The student has learned basic calculations in galvanic engineering as well as methods of applying metal coatings through experimental work.

17. Course content:

The process of obtaining galvanic and chemical coatings. Precipitation of metals on cathode. Electrocrystallization. Distribution of current and metal deposits on cathode. Precipitation of electrolyte. Preparation of samples for the application of metal coatings. Electroplating. Bath composition. Material and form of anode for electroplating. Type and density of current. Power sources and electroplating. The most important processes electroplating of metal. Electroplating with pewter. Electroplating with zinc. Electroplating with nickel. Electroplating with copper. Electroplating with chromium. Cause of mistake on coats during metal electroplating. Electroplating with noble metals. Obtaining metallic coatings by spraying molten metal. Coating obtained by diffusion processes. Electroplating of non-metallic substrates.

18. Learning methods:

- Lectures,
- Laboratory exercises,
- Consultation.

19. Assessment methods:

During the course student must do two partial (I and II) tests from the theoretical part. The subject teacher writes the grade in the index after completing all obligations for the subject (the signature from the teacher in the index) for the students who have passes I and II tests from the theoretical part of the curriculum with the maximum number of points.
All the students who did not pass one of the tests (I or II /) or who are not satisfied with the grade and who have fulfilled all the obligations on the subject are approached by the final exam.
After each test or exam, the results will be published on the info board within 7 days.

20. Assessment components:

The final grade is based on the total number of points obtained through pre-requisites and the final exam, according to the quality of the acquired knowledge and skills.
It has a maximum of 100 points, according to the following scale:

Student's obligations	Points
Attendance and participation	10 points
Seminar paper	5 points
Test in theoretical part	20 (minimum number of points to pass 10 per test)
Practical exercises	5
Seminar paper	10
Final exam	30

21. Required reading list:

- S.Đorđević, M. Maksimovic, M.Pavlovic, K.Popov, Galavanotehnika, Tehnička knjiga, Beograd (1998).
- E. Stupnišek-Lisac, Korozija i zaštita konstrukcijskih materijala, FKIT Zagreb (2007).
- I. Esih, Osnove površinske zaštite, FSB Zagreb (2010).

22. Web sources:

(max. 687 characters)

23. Applicable starting from the academic year:

2015/16.

24. Adopted in the Faculty/Academy session: