

## SYLLABUS

**1. Course title:**

Electrochemical engineering

**2. Code:**

227049A1-15

**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

8

**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:**

Chemical Engineering and Technologies / Chemical Engineering and Technology

**12. Lecturer:**

Sead Ćatić, full professor

**13. Lecturer's e-mail:**

sead.catic@untz.ba

**14. Web site:**

www.tf.untz.ba

**15. Course aims:**

The aim of the course is to provide students with theoretical basics of electrochemical engineering and to empower them for the calculation of electrochemical parameters of technological processes in production processes and interpretation of the obtained results.

**16. Learning outcomes:**

The student learned to apply previously acquired knowledge in electrochemistry to processes in electrochemical reactors. Mass transfer and working regimen in different types of reactor. He was introduced to the technical technological aspects of electrochemical production and to the basic principles of optimization of electrochemical production processes. He learned to experimentally determine the parameters of the electrochemical reactor and analyze the obtained results.

**17. Course content:**

Basic concepts and units of electrochemical engineering. Division of electrochemical reactors and basic laws in electrochemical engineering. Reactions on electrodes. Technological indicators of electrochemical production. Balance and working voltage of the electrochemical reactor, voltage balance analysis. Mass transfer in an electrochemical reactor. Optimization and technical aspects of electrochemical production. Obtaining and refining metals by electrolysis. Electrochemical technologies for the production of inorganic and organic materials.

**18. Learning methods:**

- lectures
- laboratory exercises
- consultations as needed

**19. Assessment methods:**

During the course, the student is obliged to complete two partial (I and II) tests from the theoretical part. Students who have passed the first and second test of the theoretical part of the course with maximum points, the teacher enters a grade in the index, after the completion of all obligations in the course (the signature of the teacher in the index).

All students who did not pass one of the tests (I or II), or who are not satisfied with the grade, and have done all obligations at the course (with the signature of the teacher in the index), take the final exam.

After each test or exam, the results will be published on the bulletin board within 7 days.

**20. Assessment components:**

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

Student Obligations	:Points
Attendance and activity at lectures	:10 points
Colloquium	:5
Test from the theoretical part	:20 (minimum number of points for passing is 10 per test)
Practical exercises	:5
Final Exam	:40

**21. Required reading list:**

- S. Zečević, S. Gojković, B. Nikolić, Elektrohemijsko inženjerstvo, TMF Beograd, (2001.)
- Dj. Matić, Elektrokemijsko inženjerstvo, SKTH/kemija u industriji, Zagreb (1988.)
- A. Despić, Osnove Elektrohemijske, Zavod za udžbenike i nastavna sredstva, Beograd (2003.)
- S. Zečević, Elektrohemijsko inženjerstvo zbirka zadataka, TMF Beograd, (1992.)

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

2015/2016

**24. Adopted in the Faculty/Academy session:**