SYLLABUS

1. Course title:

HYDROMECHANICAL OPERATIONS

2. Code:

3. Cycle of study:

1

4. ECTS credits:

7

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

7. Class restrictions:

No restrictions

8. Duration / semester:

1 5

9. Weekly contact hours:

9.1. Lectures: 3

9.2. Seminars: 2

9.3. Laboratory/Practice classes: 1

10. Faculty:

Faculty of Technology

11. Department/study program:

Chemical Engineering and Technologies, Food Quality and Safety

12. Lecturer:

Elvis Ahmetović, Full Professor

13. Lecturer's e-mail:

elvis.ahmetovic@untz.ba

14. Web site:

www.tf.untz.ba

15. Course aims:

Course aims are to:
- understand basic knowledge about hydro-mechanical operations and their application in the process industry,
- understand, critically analyze and solve problems of different complexity,
- perform specific laboratory experiments, analyze and present results,
- improve written and verbal communication skills.

16. Learning outcomes:

After completing the course and the teaching obligations students will be able to:
- use and analyze the available literature in order to obtain the necessary information,
- define basic concepts, understand the basics of hydro-mechanical operations and explain their importance in the process,
- sketch the technological apparatus in which hydro-mechanical operations are performed and explain the principle of their work,
- calculate/solve problems of different complexity and perform experiments,
- assess the results of the calculation and draw conclusions,
- present the results in written and verbal forms.

17. Course content:

Presentation of syllabus. Introduction to the course. Systematizations of unit operations in the process industry. Hydro-mechanical operations and their application. Introduction to fluid mechanics. Fluid dynamics. Mechanics of heterogeneous fluid systems. Settling. Fluids flow through porous beds of solids. Filtration. Fluidization. Mixing of fluids.

18. Learning methods:

Lectures, auditory (calculation) exercises, laboratory (experimental) exercises, seminars, consultations.

19. Assessment methods:

For checking the acquired knowledge in the course, written and oral examinations are used. Written examinations consist of knowledge examinations during the semester (Test I) and after the end of the semester (Test II), and an oral examination which consists of a short talk and discussion. Tests (I and II) consist of theoretical questions and calculation problems. During the semester students will be assigned with seminar works that should be completed and submitted by the end of the semester. Assessment is performed through the oral presentation of seminar work. Students should have a positive result after each assessment with at least 50% of the required knowledge. Student must achieve a minimum of 54 cumulative points in order to pass the course.
Students who intend to access the exam should be registered by the teaching assistant at latest two days before the exam. Registration includes A4 notebook on which it is necessary to write the name of the student, department, index number and academic year.

20. Assessment components:

Students obligations:	Weight (%):
Test I	50
Seminar work	10
Test II-Final exam	40

21. Required reading list:

1. McCabe, W. L., Smith, J. C. & Harriott, P. (2005). Unit Operations of Chemical Engineering. New York: McGraw-Hill.
2. Ahmetović, E. (2016). Odabrana poglavlja hemijsko-procesnog inženjerstva. Tuzla: Univerzitet u Tuzli, Tehnološki fakultet.

22. Web sources:

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session: