SYLLABUS

1. Course title:

SEPARATION PROCESSES

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

(max. 110 characters)

7. Class restrictions:

(max. 150 characters)

8. Duration / semester:

1 7

9. Weekly contact hours:

9.1. Lectures: 3

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:

Professor Muhamed Bijedić

13. Lecturer's e-mail:

muhamed.bijedic@untz.ba

14. Web site:

www.tf.untz.ba

15. Course aims:

to provide a comprehensive treatment of the major separation operations in the chemical industry, through deriving and solving material balances (total and component), energy balances, equilibria relationships (phase and chemical) and transport relationships (heat convection) of separation problems.

16. Learning outcomes:

explaining the role of separation operations in the chemical industries,
making energy, entropy, and exergy balances around a separation process,
discussing mechanisms of mass transfer and analogy between Fick's and Fourier's laws,
determining the required number of equilibrium stages (graphically and algebraically),
making a preliminary selection of a slovent using group-interaction rules,
calculating multicomponent, multistage batch rectification using shortcut methods,
describing four different periods in direct-heat drying and calculating their drying rates.

17. Course content:

Fundamental concepts. Thermodynamics of separation operations. Mass transfer and diffusion. Absorption and stripping of dilute mixtures. Liquid-liquid extraction with ternary systems. Batch distillation. Drying of solids.

18. Learning methods:

Lectures, laboratory classes, consultations.

19. Assessment methods:

Test 1: Eight questions from theory taught during the first third of semester.
Test 2: Eight questions from theory taught during the second third of semester.
Test 3: Eight questions from theory taught during the last third of semester.
Final exam: Ten questions from theory taught during the semester.

20. Assessment components:

Tests: 48 points (3 tests by 16 points, where each correct answer to the question from theory carries 2 points)
Lectures attendance: 1 point
Laboratory classes attendance: 1 point
Final exam: 50 points (each correct answer to the question from theory carries 5 points)

Final grade is based on total points earned during the semester, in any way.

Grading system: F (0-53 points), E (54-63 points), D (64-73 points), C (74-83 points), B (84-93 points), A (94-100 points)

21. Required reading list:

Seader, J.D., Henley, E.J., Roper, D.K., Separation Process Principles, John Wiley & Sons, 2011.
Baehr, H.D., Stephan, K., Heat and Mass Transfer, Springer-Verlag, 2006.

22. Web sources:

(max. 687 characters)

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session:

(max. 10 char.)