SYLLABUS

1. Course title:

Cement composites

2. Code:

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3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

Hydro-mechanical operations. Thermal Operations. Diffusion operations.

7. Class restrictions:

(max. 150 characters)

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 / Chemistry and Engineering of Materials

12. Lecturer:

prof.dr.sc. Zehrudin Osmanović

13. Lecturer's e-mail:

zehrudin.osmanovic@untz.ba

14. Web site:

untz.ba

15. Course aims:

Acquisition and expansion of knowledge in the field of cement and the development of binding materials.
Preparation, production and application of cementitious composites of targeted properties.

16. Learning outcomes:

After attending and attending the course students should:
- a remarkable development of a new product, from idea to realization.
- knows how to select a raw material base and to suggest a change of process structure in industrial capacities for the development of new cement-based products

17. Course content:

Cement composites and contemporary construction. Early hydration and solidification of cement composites. Development of new materials and obtaining cementitious composites of targeted properties by introducing additives into the cement and water reaction mixture. Hydration and solidification of cement composites in the presence of additives that affect hydration processes. Hydration and solidification of cement composites with additives which affect the workingability and integrity. Aeration of cement composites and their stability at low temperatures. Peptide Activity Supplements. Development of microstructure and corrosion stability of cement composite binder. Impact of additives on the mechanism of hydration of cement composites. Optimal amount of additives to achieve the targeted properties of the hardened cement composite. Preparation of cement composites of high strength and water permeability, stability and corrosion resistance.

18. Learning methods:

-lectures,
-presentation,
-individual and team projects.
-visits industrial plants.

19. Assessment methods:

Part 1.
Test No.1 30 points
Test No.2 30 points
Teaching activity 5 points
Individual Project 5 points
Team Project 5 points
Activity on exercises 5 points

Part 2.
Final exam 20 points

20. Assessment components:

Tests on the pre-exam should have at least 50% points. Presence of lectures is compulsory.

Score points	
0 - 53	5
54 - 63	6
64 - 73	7
74 - 83	8
84 - 93	9
94 - 100	10

21. Required reading list:

1. Osmanović, Z., Zelić, J., (2010). Proizvodnja Portland-cementa, ISBN 978-9958-897-04-7
2. Zelić, J. Osmanović. Z., (2014). Čvrstoća i trajnost cementnih kompozita, Split, KTF,ISBN 978-953-7803-01-8

22. Web sources:

23. Applicable starting from the academic year:

2015-2016

24. Adopted in the Faculty/Academy session:

(max. 10 char.)