SYLLABUS

1. Course title:

Automation of technological processes

2. Code:

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3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

Process measurement technique

7. Class restrictions:

(max. 150 characters)

8. Duration / semester:

1 8

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/Chemical engineering and technologies

12. Lecturer:

prof. dr.sc.Zehrudin Osmanović

13. Lecturer's e-mail:

zehrudin.osmanovic@untz.ba

14. Web site:

untz.ba

15. Course aims:

Acquire basic knowledge about process size measurement, description of dynamic system dynamics, structural representation of basic components, and automated control systems in the process industry.

16. Learning outcomes:

At the end of the semester, successful students who continued to perform their duties throughout the academic year will be trained to:
- find the literature necessary to solve automation in the process industry,
-processing of process systems, measuring equipment and equipment for regulation and automation of the process.

17. Course content:

Meaning of measurement. Measurement of nonelectric sizes. Sensors, measuring members and measuring devices. Industrial, process and laboratory environments and instrumentation. Methods of measurement: mechanical (path, level, thickness, density, clamping, force, stress, speed, force, flow, viscosity), thermal (temperature, amount of heat, humidity), optical (photoelectric, light) and other nonelectric sizes. Laplas transformations. Portable functions. Stability Analysis of the Regulatory System. Process control. Automatic control. Assist. Controllers. Program logic controllers. Types of system control. Automation of hydrodynamic processes. Mixing fluids and gases. Mixing fluid. System breakdown. Automation of thermal processes. Heating and cooling. Drying. Evaporation, crystallization, distillation. Mass modification processes. Reaction systems.

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. M.Petkovska, (2011.) Mjerenje i upravljanje u procesnim sistemima, Tehnološko-metaluški fakultet u Beogradu ISBN 978-86-7401-185-0.
2. M. L. Luyben, W. L. Luyben,Chemical process control(1997), McGraw-Hill.

22. Web sources:

23. Applicable starting from the academic year:

2015-2016

24. Adopted in the Faculty/Academy session:

(max. 10 char.)