

SYLLABUS

1. Course title:

MEASUREMENT AND CONTROL IN THE FOOD INDUSTRY

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

3

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:

2

9.2. Seminars:

0

9.3. Laboratory/Practice classes:

1

10. Faculty:

Faculty of Technology

11. Department/study program:

Food Technology/Food Quality and Safety

12. Lecturer:

prof. dr.sc.Zehrudin Osmanović

13. Lecturer's e-mail:

zehrudin.osmanovic@untz.ba

14. Web site:

untz.ba

15. Course aims:

Based on the knowledge acquired on the fundamental subjects of this course, the student has the following goals:

- Linking of the acquired knowledge from the courses in the field of process engineering,
- Adopting process control elements and automation functions.
- Implementation of automation and regulation elements in the food industry.

16. Learning outcomes:

There is a system approach in metrology, the necessary knowledge and experience on the methodology of experiment planning in the technical field, selection of measurement methods, measurement accuracy analysis and static evaluations of experimental results.

Knowledge of the automation elements necessary for guiding and controlling processes in the food industry.

Knowledge of basic concepts about managing technical systems, structural forms of management, and system dynamics analysis is provided.

17. Course content:

Measurement. Measurement of pressure, level, flow, temperature, relative humidity, pH. Executable elements. Regulatory circuit. Processes and regulation diagrams. Measurement error analysis and instrument calibration. Measuring systems for physical size in the food industry (mass, level, flow, pressure, temp of Laplas transformation.) Transmission functions Regulatory system stability analysis Process control Automatic control Sensors Controllers Program logic controllers System control types Automation of hydrodynamic processes In food engineering Automation of heat processes Heating and cooling Drying Automation of evaporation Automation of the process of crystallization Automation of the process with mass modification.

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. Jotice/Hall International, Inc., Englewood Cliffs, New Jersey, (1988)
2. W. L. Luyben, Process modelling, simulation, and control for chemical engineers, McGraw-Hill Publishing C
3. Kurtanjek "Mjerenje i vođenje biotehnoških procesa", skripta,

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

2015-2016

24. Adopted in the Faculty/Academy session:

(max. 10 char.)