SYLLABUS

1. Course title:

Programming and application of controls

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:	2
9.2. Seminars:	0
9.3. Laboratory/Practice classes:	2

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Mechatronic

12. Lecturer:

dr.sc. Elvedin Trakić, doc.

13. Lecturer's e-mail:

elvedin.trakic@untz.ba

14. Web site:

www.mf.untz.ba

15. Course aims:

The main objective of the course „ Programming and application of controls “ is to understand the nature, function and role of PLC elements that make up the mechatronics system and master the necessary theoretical and practical skills in the field of subject studies in order to increase knowledge in the field of mechatronic systems as well as the competitive advantages of mechatronics system through the improvement of process efficiency and their successful integration with other segments in production processes.

16. Learning outcomes:

Students will be trained in the programming, control and regulation of mechatronic systems, that they can independently equip a mechanical system with adequate PLC components, with the aim of converting it into a mechatronic system (control and regulation systems).

17. Course content:

1- Basic concepts of programmable logic controllers.
2-Programmable Logic Controller PLC- Simens Logo Soft.
3-Programmable Logic Controller - Arduous platform.
4. LAD - Ladder, Block Programming
5- Logic Programming .
6- Programming in C ++.
7- Examples of PLC programming, process management.
8-Examples of Arduino's programming and management.

18. Learning methods:

Lectures, Auditorial exercises.
For each of these methods, give a description of their content and the obligations of the students.

19. Assessment methods:

- Designing and defending the seminar/ graphic works - student defends his / her work in front of the professor / assistant - answers questions asked
- Written exam (from the theoretical part) - student solves questions / tasks in a given time period related to the subject of study

- Report on laboratory exercises - submission of reports on the activities related to the realization of certain laboratory exercises, answering questions asked by the assistant
- Final exam - oral answer to the questions asked by professors
- Correctional exam (written) - Solving questions / tasks over a period of time related to the subject of the study
- Correctional exam (oral) - Oral answering questions

20. Assessment components:

- Attendance of the teaching process 5 points
- Tests with questions from theory (eg 2 tests x 15 points = 30 points)
- Independent tasks (eg 1 seminar work x 20 points = 20 points)
- Final exam 45 points

5+ (30) + (20) + (45) = 100 points

21. Required reading list:

1. John R. Hackworth,: Frederick D. Hackworth, Jr.:PLC:Programming Methods and Applications.
2. Kevin Collins: PLC Programming for Industrial Automation

22. Web sources:

(max. 687 characters)

23. Applicable starting from the academic year:

2015/16

24. Adopted in the Faculty/Academy session:

01.06.2015