SYLLABUS

1. Course title:

MEHATRONIC MODULES

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 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:

• Training of students to solve engineering problems in the design of mechatronic modules

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: master the basic knowledge of the mechatronic modules.

17. Course content:

• Introduction, concept, definition and modeling concept. Modeling and classification of models (descriptive, physical, mathematical).
• Basics of mathematical modeling, equations describing dynamic systems. Concept of making a mechatronic module.
• Mechatronic system components. Integration of electromechanics, electronics, computer equipment and software.
• The basics of mathematical modeling of mechanical systems of the zero, first, second and higher order.
• Portable function of the mechanical system. Troubleshooting the "black box" for the purpose of controlling and controlling the technical systems in the closed connection.
• Analog of dynamic systems. Portable function of linear and dynamic system. Portable function of the mechatronic system.
• Control and regulation of the mechatronic system with the occurrence of external disturbances and noise on the system.
• Simulation methods, tools and software for simulation.

18. Learning methods:

Lectures are performed in a classical manner, using multimedia resources and active learning techniques and student participation.

19. Assessment methods:

The concept of knowledge checking is based on continuous work with students during the semester. Knowledge assessment methods include: developing seminar work as well as final assessment of knowledge in written and / or oral form. This is why all students with different affinities provide equal treatment (written and / or oral knowledge).

20. Assessment components:

• Presence continues 5 points
• Tests (eg 2 work x 20 points = 40 points)
• Seminar papers (up to 20 points)
• Oral exam up to 35 points

5 + (40) + 20 + 35 = 100 points

Defend and accept seminar work and conquer at least 50% of total points

21. Required reading list:

1. Alciatore D.G., Histand M.B.: Introduction to Mechatronics and Measurment System, Mc Graw Hill, 2003.
2. Stadler W.: Analytical robotics and mechatronics, McGraw-Hill, 1995.

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