SYLLABUS

1. Course title:

Virtual design

2. Code:

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

○ Mandatory   ● Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester:

1   8

9. Weekly contact hours:

9.1. Lectures:	2
9.2. Seminars:	1
9.3. Laboratory/Practice classes:	0

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Power Mechanical Engineering

12. Lecturer:

dr.sc. Elvedin Trakić, Assistant Professor

13. Lecturer's e-mail:

elvedin.trakic@untz.ba

14. Web site:

www.mf.untz.ba

15. Course aims:

The main goal of the course is to acquire theoretical and practical knowledge in the field of virtual design and its application in the mechatronics.

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 understand what is the mechatronic, to recognize the mechatronic system and to independently design the mechatronic systems.

17. Course content:

The basics of industrial design. Classification criterion. The basic of design. Industrial-design drawings. Evolution of creative process from a concept, sketch to a finished product. Basic rules in the design of mechanical, electro, hydraulic and pneumatic systems. Mechatronic approach to the development of new machines and devices. Defining a technical problem. Analog and synthesis of mechanical systems. Methods forfinding a solution in mechatronic design. Realization of projects with a mechatronic approach. Creating a control interface in the Lab View software. Creating models using software packages; Fluidsim, Lab View.

18. Learning methods:

Lectures, Auditorial and Laboratory Exercises, Written and Oral Examination, Assignments/ Graphic Works and Consultations

19. Assessment methods:

Defense of Assignments, project paper work - student defends his / her work in front of the professor / assistant - answers questions asked.

Written (from the theoretical part and the tasks) - 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 Professor's Questions.

Corrective Exam (Written) - Solving Questions / Tasks in a Specific Timeframe Related to the Subject of Study.

Corrective Exam (Oral) - Oral Answer to Questions Asked.

20. Assessment components:

Activity Points
Lecture attendance - 18 arrivals (9P + 9V) = 1 point, 27 to 30 arrivals = 10 points
Tests (50 points total) - 2 tests (tasks + theory) x 25 = 50 points
The test consists of three assignments of 5 points + 10 questions from the theory of 1 point,
Independent assignments 3 x 5 = 15 points
Final Exam: 25 points

21. Required reading list:

1. D. Shetty, R. Kolk: "Mechatronics system design", PWS Publishing Company, 1997.
2. L. Kamm: "Understading electro - mechanical Engineering – An introduction to mechatronics," IEEE press, 1995.

22. Web sources:

23. Applicable starting from the academic year:

2015/16

24. Adopted in the Faculty/Academy session:

01.06.2015