SYLLABUS

1. Course title:

MEASUREMENT AND CONTROL

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

7. Class restrictions:

no restrictions

8. Duration / semester:

1 7

9. Weekly contact hours:

9.1. Lectures: 2

9.2. Seminars: 0

9.3. Laboratory/Practice classes: 1

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Mechatronics

12. Lecturer:

dr.sc. Emir Šarić van. prof

13. Lecturer's e-mail:

emir.saric@untz.ba

14. Web site:

www.untz.mf.ba

15. Course aims:

To understand the basics of metrology, organization, methods of collecting and analyzing measurement results.
To understand the basic elements and functions of measuring systems for measuring nonelectrical values.
To enable students to choose and analyze the measuring system / device after successful mastery of the course, apply traditional quality control tools.

16. Learning outcomes:

From the student after the successful completion of the learning process is expected to: understand basic principles and postulate measurements, be able to analyze and quantify the measurement uncertainty, choose elements of metering systems for measurement nonelectric values electrically, perform a system / device analysis and evaluate the adequacy of the application construct and analyze control charts, use the basic tools used for quality control and preventative tools for quality management.

17. Course content:

- Introduction to Metrology,
- Principles and Postulates of Measurement
- Processing measurement results
- Measurement errors and insecurities,
- Calculation of measurement uncertainty,
- Metrology properties of measuring systems,
- Analysis of the measuring system,
- Measuring system for tensometer,
- Measuring systems for temperature measurement with electronic systems,
- Coordinate metrology,
- Quality control,
- Essential Quality control Tools,
- Preventive methods for quality management,
- Failure Mode Effects Analysis (FMEA),
- Process variation and process ability.

18. Learning methods:

In order of successful learning within the subject the following activities are planned:
- Lectures - theoretical lectures, active two-way communication student - teacher, the obligatory presence of students; segment of active participation in the teaching of students will include and deal with a given topic by the student and public defense of the same.
- Exercises;
- Tests of the theory and problems - solving tests and problems;
- Seminar work - independent work of students in solving the above problem, consultations.

19. Assessment methods:

After half of the semester, students take the first colloquial exam that includes previously treated themes. Colloquial exam consists of a theoretical part and problem solvings. On the first colloquial exam students can achieve a maximum of 15 points.
After completing the semester students take second colloquial exam that includes previously treated themes which consists of a theoretical part and problems where they can achieve a maximum of 15 points. Colloquial exams are prepared by the teacher to the students in a given period of time were able to respond to questions posed from the problems of the attached material. Both tests taken by all students in the course at the same time thereby achieving uniformity of the level of knowledge that is being tested, as well as the conditions under which the student takes the exam.
As part of the pre-exam activities, students are required to make of the individual seminar that will cover specific topics from the contents of the subject. Students essay submitted in writing by the subject teacher to review and assessment, and then orally presented and answer the questions asked on exposed themes. Exercises are performed problems and calculation examples of areas that were carried out in class. As part of laboratory exercises in order to be program of construction of one of the clamping system or specially intended for cutting tools.

The final and makeup exam is oral type, and the maximum number of points that can be achieved on the final exam is 50, and the right for the final exam is defended seminar and earn 50% of points on partial knowledge tests.
Assessment of students recognized as a cumulative exam if the result reached after each individual test is 50% or more of total scheduled or required knowledge and skills.
In order for the student to pass the subject must achieve a minimum of 54 cumulative points of which a minimum of 45 points at the final oral exam.

20. Assessment components:

Exam grade is based on the total number of credits a student gained fulfilling exam prerequisites and passing exams and contains a maximum of 100 points, according to the following scale:

Students' obligations	Points
Presence in classes	5
Seminar + Activity	20
Colloquial test	30
Final exam from	45

21. Required reading list:

1. A.G.Grujović, Tehnička Merenja I-Osnovi teorije merenja, MF Kragujevac, Kragujevac 1999
2. M.Popović, Senzori i mjerenja, Viša elektrotrhnička škola, Beograd, 1994
3. K. Yang; B.El Haik, Design for Six Sigma, McGraw Hill

22. Web sources:

23. Applicable starting from the academic year:

2015/2016

24. Adopted in the Faculty/Academy session:

01.06.2015