SYLLABUS

1. Course title:

Materials I

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 1

9. Weekly contact hours:

9.1. Lectures: 2

9.2. Seminars: 1

9.3. Laboratory/Practice classes: 1

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Production Engineering, Power Engineering, 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:

Acquiring theoretical knowledge and practical skills in the field of Construction Materials I,

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: possess basic knowledge in the field of Materials I,

17. Course content:

• Introductory lectures on the function, importance and choice of materials in constructions
• Atomic and crystalline metal
• Alloys and crystalline alloys
• Condition diagrams, two-component and three-component systems
• Elastic and plastic deformation of crystalline bodies
• Metallurgy of metals and alloys, iron and steel
• Equilibrium diagram of Fe-Fe3C and Fe-C states
• Diagrams of austenite IR and KH diagrams
• Thermal and thermo-thermal treatment of steel
• Iron level
• Painted materials: Al, Ti, Cu, Mg
• Standard - Designation of steel and non-ferrous metals and alloys (JUS, DIN, EN)

18. Learning methods:

Lectures, auditorial and laboratory exercises.

• Lectures are handled by teaching units that are defined by the content of the course.
• Auditorial exercises are held according to the foreseen curriculum and are followed by subjects studied within teaching units.
• Laboratory exercises are held according to the foreseen curriculum and are accompanied by subjects studied within teaching units.

19. Assessment methods:

Methods of knowledge assessment are: independent assignments, tests, final exam (written).

• Self-contained tasks that students need to solve and submit to the end of the semester. The total number of points a student can win for self-taught assignments is 14 points, based on the success of the assignment.
• Theories from the theory represent a form of continuous checking within which students solve tasks in certain areas. During semester, students take 2 tests. For each test, a student can score up to 15 points, which makes a maximum of 30 points for solving tests.
• The final exam is placed verbally after the pre-fulfilled conditions regarding regular attendance and teaching activity and self-directed assignments, with a maximum of 46 points. In order to successfully complete the final exam, the student must win at least 23 points.

Rating system: (10) + (30) + (14) + (46) = (100) points

In order for a student to obtain a signature and to enter the final exam, it is necessary to fulfill the following conditions:
- Attend to 50% of lectures and exercises,
- to carry out independent tasks,
- to fulfill all the other conditions that the subject teacher places during the semester.
Summarized points are collected from all student activities during the semester to the final exam. If the student has obtained the required score for the pass grade, the grade can be entered in the index. If the student has not achieved the required number of points, additional points can be obtained on the final written exam.

20. Assessment components:

The assessment of the exam is based on the total number of points the student has obtained by fulfilling the pre-requisites and passing the exam according to the quality of the acquired knowledge and skills, and it contains a maximum of 100 points and is determined according to the following scale:

• Attendance attendance - maximum 10 points
• Tests on theories from theory - maximum 30 points
• Independent tasks (exercises performed, homework assignments etc) - maximum 14 points
• Final exam - minimum 23 and maximum 46 points

21. Required reading list:

1. Kudumović: Materijali I, Mašinski fak. Tuzla 2009
2. Blagojević,Ismailović,Pašić:" Materijali u mašinstvu",Glas Banja Luka 1987 g.
2. Manojlović:" Mašinski materijali",Mašinski fak. Beograd 1980
3. Kudumović: Zavarivanje i termička obrade,FEM Tuzla 1998

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