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|---|---------------------------|---------------------------------|-----------------|----------------|
| <b>Study program / course:</b> Mechanical engineering   |                           |                                 |                 |                |
| <b>Type and level of study:</b> Basic academic studies  |                           |                                 |                 |                |
| <b>Course:</b> Metal Structures   |                           |                                 |                 |                |
| <b>Lecturers:</b> Ružica R. Nikolić   |                           |                                 |                 |                |
| <b>Status of course:</b> Obligatory for module M <sub>2</sub> , V semester  |                           |                                 |                 |                |
| <b>Number of ECTS:</b> 6  |                           |                                 |                 |                |
| <b>Prerequisite:</b> Passed exams: Mechanics I (Statics) and Strength of Materials  |                           |                                 |                 |                |
| <b>The course objective</b><br>Enabling student to solve the problems from the area of metal structures and to apply the acquired knowledge in practice in solving the problems of structural integrity and structures design   |                           |                                 |                 |                |
| <b>The course outcome</b><br>Student is capable of independently solving the problems of structural elements and their connections calculation and design of a structure as a whole.  |                           |                                 |                 |                |
| <b>Syllabus</b>   |                           |                                 |                 |                |
| <b>Theoretical study</b>  |                           |                                 |                 |                |
| Lecturing   |                           |                                 |                 |                |
| Application area, characteristics and types of metal structures. Types and cases of loads of structures and types of stresses in structures. Basic structural elements and their machining in the workshop. Connections and extensions of structural elements. Welding and calculations of welded joints. Calculations and dimensioning of columns. Calculations and dimensioning of girders. |                           |                                 |                 |                |
| <b>Practical classes</b>  |                           |                                 |                 |                |
| Problems solving, homeworks, tests and colloquia. (Same areas as for theoretical lecturing).  |                           |                                 |                 |                |
| <b>Recommended reading</b>  |                           |                                 |                 |                |
| 1. Milosavljevic M., M. Radojkovic, B. Kuzmanovic, <u>Steel Structures Fundamentals</u> , The Civil Engineering Book, Belgrade, 1986. (In Serbian)  |                           |                                 |                 |                |
| 2. Ostric D., <u>Metal Structures</u> , Faculty of Mechanical Engineering, Belgrade, 1988. (In Serbian).  |                           |                                 |                 |                |
| 3. Nikolic R., V. Marjanovic, <u>Metal Structures - Handbook for Calculations</u> , Faculty of Mechanical Engineering, Kragujevac, 1998. (In Serbian).  |                           |                                 |                 |                |
| 4. Nikolic R., <u>Metal Structures -Lecture Notes</u> (In E-form).  |                           |                                 |                 |                |
| The number of hours of active teaching:   |                           |                                 |                 | Other classes: |
| Theory:<br>3  | Practical classes:<br>1.6 | Other forms of teaching:<br>0.4 | Research study: | 1 (Final test) |
| <b>Methods of teaching</b>  |                           |                                 |                 |                |
| Lecturing, Practical work, consultations (group and individual)   |                           |                                 |                 |                |
| <b>Evaluation of knowledge</b>  |                           |                                 |                 |                |
| <b>Pre-final exam obligations</b>   | <b>Points</b>             | <b>Final exam*</b>              | <b>Points*</b>  |                |
| Activities during the classes:  | <b>10</b>                 |                                 | <b>40</b>       |                |
| Practical classes:  |                           |                                 |                 |                |
| Tests:  | <b>25</b>                 |                                 |                 |                |
| Homeworks:  | <b>25</b>                 |                                 |                 |                |
| * The final test is taken only by candidates that are not satisfied with their score on tests and colloquia. In that case, only the score on final test is counted for the final grade.   |                           |                                 |                 |                |