

## Information sheet for the course Seminar in Mechanics of Solid Bodies

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| <b>University:</b> <i>Alexander Dubček University of Trenčín</i>   |   |
| <b>Faculty:</b> <i>Faculty of Industrial Technologies in Púchov</i>  |   |
| <b>Course unit code:</b> <i>MI-PV-8</i>  | <b>Course unit title:</b> <i>Seminar in Mechanics of Solid Bodies</i> |
| <b>Type of course unit:</b> <i>optional</i>  |   |
| <b>Planned types, learning activities and teaching methods:</b><br><i>Lecture: 0</i><br><i>Seminar: 2 hours weekly/26 hours per semester of study; face to face</i><br><i>Laboratory tutorial: 0</i>   |   |
| <b>Number of credits:</b> <i>2</i>   |   |
| <b>Recommended semester:</b><br><i>the 3<sup>rd</sup> semester in the 2<sup>nd</sup> year of the full-time form of study,</i><br><i>the 3<sup>rd</sup> semester in the 2<sup>nd</sup> year of the part-time form of study.</i>   |   |
| <b>Degree of study:</b> <i>the 1<sup>st</sup> degree of study (Bachelor's degree)</i>  |   |
| <b>Course prerequisites:</b> <i>none</i>   |   |
| <b>Assessment methods:</b><br><i>During the semester, four sub-tests are written while the total number of point for each one written sub-test is 20 points. On the basis of the overall summary of these four tests, student has to obtain at least 75 points to get the best evaluation mark (A – excellent). In relation to other marks referring to grading system, if student obtains 70 points after overall summary, the resulting mark is B (laudable). Mark C (good) in this evaluation grading system refers to 65 points; mark D (accepted results) is given to student who obtains 60 points after overall summary of four tests and E (pass) is given when students obtain 55 points. If student obtains less than 55 points after overall summary of four tests, student is not given the predetermined number of credits and moreover, if student obtains less than 12 points with reference to any of the mentioned four tests, the predetermined credits are also not given to him/her.</i> |   |
| <b>Learning outcomes of the course unit:</b><br><i>Student is able to solve the specific tasks focused on balance of point, balance of solid bodies, balances of bar constructions as well as solid body systems, passive resistances. Moreover, He/she is familiar with kinematics of point, solid body and solid body systems. Student has also acquired knowledge relating to solution of simple tasks from mechanics including elastic or any other solid bodies. From the aspect of mechanics, student is familiar with terms as tensile, bend, pressure, torsion and many others. Furthermore, student has improved his/her knowledge in relation to strength hypotheses, combined loading and by this way he/she is able to propose the design of the beam cross-section with the regard to the loading mentioned above.</i>  |   |
| <b>Course contents:</b><br><i>The solution of tasks focused on balance of point, solid body and solid body systems. Solution of tasks connected with bar constructions, solution of tasks where the passive resistances occur. Solution of tasks relating to dynamics of point, solid body and solid body systems. Solution of tasks including natural vibration frequencies and forced vibration frequencies. Study activities with beam which is under the tensile loading, pressure loading, bend loading and torsion loading.</i>  |   |
| <b>Recommended or required literature:</b><br><ol style="list-style-type: none"><li><i>1. VAVRO, J., VAVRO, J. ml.: MECHANIKA I-Statika, Fakulta priemyselnych technológií so sídlom v Púchove, TnUAD v Trenčíne, 2011</i></li><li><i>2. VAVRO, J., KOPECKÝ, M.: Nové prostriedky a metódy riešenia sústav telies I, ZUSI v Žiline 2001, ISBN 80-968605-0-X.</i></li><li><i>3. JANČINA, J., PEKÁREK, F.: Kinematika, Alfa Bratislava 1987</i></li><li><i>4. Medvec, Stradiot, Záhorec, Caban: Mechanika III, Dynamika, SNTL Praha, 1988</i></li><li><i>5. CÚTH V., TÓTH E.: Pružnosť a pevnosť, ES VŠDS Žilina, 1995.</i></li></ol>  |   |

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| <b>Language:</b> <i>Slovak</i>   |                 |             |                         |             |             |
| <b>Remarks:</b> —  |                 |             |                         |             |             |
| <b>Evaluation history: /Grading system/</b>                                    |                 |             |                         |             |             |
| A  | B               | C           | D                       | E           | FX          |
| <i>Excellent</i>   | <i>Laudable</i> | <i>Good</i> | <i>Accepted results</i> | <i>Pass</i> | <i>Fail</i> |
| <b>Lecturers:</b> <i>prof. Ing. Ján Vavro, PhD., doc. Ing. Ján Vavro, PhD.</i> |                 |             |                         |             |             |
| <b>Last modification:</b> <i>31.03.2014</i>                                    |                 |             |                         |             |             |
| <b>Supervisor:</b> <i>prof. Ing. Darina Ondrušová, PhD.</i>                    |                 |             |                         |             |             |