

Information sheet for the course Computer - Aided Materials Engineering II

University: <i>Alexander Dubček University of Trenčín</i>					
Faculty: <i>Faculty of Industrial Technologies in Púchov</i>					
Course unit code: <i>MI-P-29</i>			Course unit title: <i>Computer - Aided Materials Engineering II</i>		
Type of course unit: <i>compulsory</i>					
Planned types, learning activities and teaching methods: <i>Lecture: 0</i> <i>Seminar: 0</i> <i>Laboratory tutorial: 2 hours weekly/26 hours per semester of study; face to face</i>					
Number of credits: <i>2</i>					
Recommended semester: <i>the 5th semester in the 3rd year of the full-time form of study,</i> <i>the 5th semester in the 3rd year of the part-time form of study.</i>					
Degree of study: <i>the 1st degree of study (Bachelor's degree)</i>					
Course prerequisites: <i>accomplishment of MI-P-24 (Computer-Aided Materials Engineering I)</i>					
Assessment methods: <i>To accomplish the given subject, student is obliged to be present at the lessons with the reference to specifications introduced in the study rules for the given study programme. He/she is also obliged to prepare and defend the project which is closely connected with utilisation of numerical method while this method is used for solution of one specified task involving solid body system under the dynamic loading.</i>					
Learning outcomes of the course unit: <i>Student is able to solve the simple specific tasks with utilisation of the commercial software, which is commonly used in the field of dynamics and the given software is based on the finite element method (FEM). Furthermore, students can make the models and solve the problems relating to various kinds of materials which are under the static, dynamic or thermal loading.</i>					
Course contents: <i>Input data. Post-processing. Analyses of 2-D and 3-D constructions. Special features and elements. Features and elements of fracture mechanics. Concentration of stresses. Dynamic analysis of constructions. Harmonic analysis and transient analysis. Analysis of constructions with bumped or absorbed vibrations. Creation of the computational models and solution of tasks focused on the dynamic loading, heat transfer or transition as well as forced vibrations.</i>					
Recommended or required literature: <i>Manual Books relating to ADINA 2.8.6</i> <i>IVANČO, V. - KUBÍN, K. - KOSTOLNÝ, K.: Metóda konečných prvkov I. Košice, Elfa, 1994</i> <i>BITNÁR, Z.: Metóda konečných prvků I a II, ČVUT Praha, 1992</i> <i>BENČA, Š.: Aplikovaná pružnosť I: Metóda konečných prvkov. STU Bratislava, 1989</i> <i>COOK, R. D.: Concepts and Applications of FEM Analysis. John Wiley and Sons, 1989, Third Edition</i>					
Language: <i>Slovak</i>					
Remarks: —					
Evaluation history: /Grading system/					
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>
Lecturers: <i>doc. Ing. Ján Vavro, PhD.</i>					
Last modification: <i>31.03.2014</i>					
Supervisor: <i>prof. Ing. Darina Ondrušová, PhD.</i>					