

Information sheet for the course Finite Element Method I (Adina)

University: <i>Alexander Dubček University of Trenčín</i>					
Faculty: <i>Faculty of Industrial Technologies in Púchov</i>					
Course unit code: <i>PP-P-18</i>			Course unit title: <i>Finite Element Method I (Adina)</i>		
Type of course unit: <i>compulsory</i>					
Planned types, learning activities and teaching methods:					
<i>Lecture: 1 hours weekly/13 hours per semester of study; face to face</i>					
<i>Seminar: 0 hours</i>					
<i>Laboratory tutorial: 3 hours weekly/39 hours per semester of study; face to face</i>					
Number of credits: 5					
Recommended semester: <i>3rd semester in the 2nd year full-time</i> <i>3rd semester in the 2nd year part-time</i>					
Degree of study: <i>the 1st degree of study (Bachelor's degree)</i>					
Course prerequisites:					
Assessment methods: <i>individual work</i>					
Learning outcomes of the course unit: <i>The student is familiar with the software environment ADINA 2.8.6. and knows the practical aspects of modeling, FEM in this environment with emphasis on modeling of linear problems statically and dynamically loaded structures composed of whip, beam, housing and shell elements.</i>					
Course contents:					
<ul style="list-style-type: none"> • <i>FEM modeling and general considerations. General postprocessing. Types of finite elements (planar tightness, plane deformation, axisymmetric bodies).</i> • <i>3D finite elements. Plates, shells and casings. Material properties: isotropic, orthotropic, anisotropic.</i> • <i>Static and geometric boundary conditions. Symmetry and antisymmetry. Creating model. Solid modeling and direct generation.</i> • <i>Boolean operations. Attributes elements. Import volume models from CAD systems.</i> 					
Recommended of required reading:					
<i>Manual ADINA 2.8.6</i>					
<i>IVANČO, V. - KUBÍN, K. - KOSTOLNÝ, K.: Metóda konečných prvkov I. Košice, Elfa, 1994</i>					
<i>BITNÁR, Z.: Metoda 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:					
A	B	C	D	E	FX
Lecturers: <i>doc. Ing. Ján Vavro, PhD., doc. Ing. Ján Vavro, PhD. Ing. Petra Kováčiková, PhD.</i>					
Last modification: <i>31.03.2015</i>					
Supervisor: <i>doc. Ing. Ján Vavro, PhD.</i>					

