

Information sheet for the course Modern Methods of Computational Modeling

University: <i>Alexander Dubček University of Trenčín</i>					
Faculty: <i>Faculty of Industrial Technologies in Púchov</i>					
Course unit code: <i>MI-I-V-8</i>			Course unit title: <i>Modern Methods of Computational Modeling</i>		
Type of course unit: <i>optional</i>					
Planned types, learning activities and teaching methods: <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>2nd semester in the 1st year full-time</i> <i>2nd semester in the 1st year part-time</i>					
Degree of study: <i>the 2nd degree of study (Engineer's degree)</i>					
Course prerequisites: <i>none</i>					
Assessment methods: <i>Active participation in the seminars. The final exam.</i>					
Learning outcomes of the course unit: <i>Students can use modern methods of computational modeling and their application in practice. Students have knowledge of the inputs to the calculation, their settings and learn to evaluate the results of the calculations.</i>					
Course contents: <i>Overview of modern methods of computational modeling. Numerical methods and their benefits and drawbacks with respect to the so-called traditional methods. Finite element method. The necessary inputs in the calculations. Computational modeling of composites. Options of accelerated calculation by setting the computer programs, using geometric planes of symmetry and properties of materials. The influence of material parameters and their sensitivity to calculations speed and the precision of results. The principles of proper evaluation of the results of computational modeling.</i>					
Recommended of required reading: <ol style="list-style-type: none"> 1. <i>Ever J. Barbero. Finite Element Analysis of Composite Materials Using ANSYS - Second Edition, CRC Press, 2014. ISBN 978-1-4665-1689-2.</i> 2. <i>E. J. Barbero, Finite Element Analysis of Composite Materials, CRC Press, Boca Raton, FL, 2007. ISBN 978- 1-4200-5433-3.</i> <i>Aktuálna literatúra zaoberajúca sa výpočtovým modelovaním a ich metódami.</i>					
Language: <i>Slovak</i>					
Remarks:					
Evaluation history: <i>0</i>					
A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0
Lecturers: <i>doc. Ing. Jan Krmela, PhD.</i>					
Last modification: <i>31.03.2014</i>					
Supervisor: <i>prof. Ing. Darina Ondrušová, PhD.</i>					

