

Information sheet for the course Selected Chapters from Materials Science

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>Faculty of Industrial Technologies in Púchov</i>	
Course unit code: <i>M-P-10</i>	Course unit title: <i>Selected Chapters from Materials Science</i>
Type of course unit: <i>compulsory</i>	
Planned types, learning activities and teaching methods:	
Number of credits: <i>4</i>	
Recommended semester: <i>Obligatory to complete at the latest in the half of the standard length of study</i>	
Degree of study: <i>the 3rd degree of study (PhD. degree)</i>	
Course prerequisites: <i>Completing of all obligatory and obligatory/optional courses of the curriculum prescribed in the study part of the doctoral study programme including the course with unit code M-P-I Materials Science, satisfying all requirements for admission to the dissertation examination</i>	
Assesment methods: <i>Successful completing of the subject of the dissertation examination</i>	
Learning outcomes of the course unit: <i>The student successfully completes the subject of the dissertation examination</i>	
Course contents: <i>Brief characteristics of structural materials from the aspect of material and utility properties Conditions for the life of materials in given structures Static and dynamic loading of materials Effect of the environment (external conditions) on material properties Limit states of materials used for components Characteristics of materials with respect to their production (casting, welded material, material obtained by plastic straining, machined material, etc.) Effect of plastic strain on the structure of material Definition of imperfections in materials and their identification Proposals of surface treatment (coating, heat treatment, etc.) Fracture behaviour of materials under various loads. Fractography Mechanical properties of materials Physical properties of materials Chemical properties of materials Structural properties of metallic and nonmetallic materials Nonmetallic materials and their material characteristics Advanced types of materials (materials for power engineering, biomaterials, transportation and mechanical engineering) Composites and nanocomposites.</i>	
Recommended references and resources: <i>1. Zborníky z vedeckých konferencií. Informácie z internetu www stránok. 2. Puškár, A., Hazlinger, M.: Porušovanie a lomy súčastí. EDIS Žilina, 2000, ISBN 80-7100-654-8.</i>	

3. <i>Hazlinger, M., Moravčík, R.: Degradáčné procesy a predikcia životnosti, AlumniPress, 2007, ISBN 978-80-8096-031-5.</i>					
4. <i>Ptáček, L. a kol.: Nauka o materiálu I, II, III, Brno, CERM, 20001, ISBN 80-7204-193-2</i>					
Language: <i>Slovak</i>					
Remarks: <i>none</i>					
Evaluation history: <i>Total number of classified students : 0</i>					
A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0
Lecturers: <i>prof. Ing. Františka Pešlová, PhD.</i>					
Last modification: <i>30.04.2014</i>					
Supervisor: <i>prof. Ing. Darina Ondrušová, PhD.</i>					