

## Information sheet for the course Powder Metallurgy

<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>PP-PV-14</i>	<b>Course unit title:</b> <i>Powder Metallurgy</i>
<b>Type of course unit:</b> <i>optional</i>	
<b>Planned types, learning activities and teaching methods:</b> <i>Lecture: 2 hours weekly/26 hours per semester of study; face to face</i> <i>Seminar: 0</i> <i>Laboratory tutorial:0</i>	
<b>Number of credits:</b> <i>2</i>	
<b>Recommended semester:</b> <i>the 6<sup>th</sup> semester in the 3<sup>rd</sup> year of the full-time form of study</i> <i>the 8<sup>th</sup> semester in the 4<sup>th</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> <i>Individual work</i>	
<b>Learning outcomes of the course unit:</b> <i>Students are acquainted with principles of creating and applying products produced from powdered materials</i>	
<b>Course contents:</b> <i>Significance and application of the technology of processing powdered materials in industrial practice. Orientation of development of sintered materials and components made of powdered materials. Steel sintered materials (structural), tool materials made of sintered powdered materials (high-speed steels, sintered carbides, cements, ceramics). High-temperature powdered materials (superalloys, refractory metals and their alloys, high-temperature sintered materials and sintered contact materials). Materials for friction bearings, for production of filters. Ferromagnetic materials. Mechanical properties of materials and components made of powdered materials. Production of metallic powders (mechanical, chemical and electrochemical methods). Methods of treatment of metallic powders. Compacting of metallic powders. Pressing. Rolling. Sintering powders. Additional modifications of semi-products made of powdered materials (calibrating, coining, forging). Methods of assessment of the quality of compacting and sintering. Surface treatment of components made of powdered materials. Treatment of cutting inserts made of sintered carbides. Metal spray coatings. Structural and technological principles of creation of components made of sintered powders.</i>	
<b>Recommended references and resources:</b> <i>Pluhař, J. - Korita, J.: Strojírenské materiály. SNTL Praha. 1981.</i> <i>Lukáč, I.: Spracovania práškových kovov. VŠT Košice. 1988.</i> <i>Hluchý, M. - Kolouch, J. - Paňák, R.: Strojírenská technologie 2. Polotovary a jejich technologičnost. Scientia Praha. 1998.</i> <i>Lenelf, V.: Powder metallurgy. Principles and Applications. Metal Powder Industries</i>	

<i>Federation. Princeton, 105 College Road 1980</i>					
<b>Language:</b> <i>Slovak</i>					
<b>Remarks:</b> <i>none</i>					
<b>Evaluation history:</b> <i>Number of classified students : 0</i>					
A	B	C	D	E	FX
0.0	0.0	0.0	0.0	0.0	0.0
<b>Lecturers:</b> <i>prof. Ing. Františka Pešlová, PhD., doc. Ing. Ondrej Nemčok, PhD.</i>					
<b>Last modification:</b> <i>31.03.2015</i>					
<b>Supervisor:</b> <i>doc. Ing. Ján Vavro, PhD.</i>					