

## Information sheet for the course Preparation and processing of metallic and non-metallic materials

<b>University:</b> <i>Alexander Dubček University of Trenčín</i>	
<b>Faculty:</b> <i>Faculty of special technology</i>	
<b>Course unit code:</b> <i>STaM/D/3-31/e</i>	<b>Course unit title:</b> <i>Preparation and processing of metallic and non-metallic materials</i>
<b>Type of course unit:</b> <i>compulsory</i>	
<b>Planned types, learning activities and teaching methods:</b> <i>Lectures three hours per week / 1 hour per week laboratory course, part-time</i>	
<b>Number of credits:</b> <i>15</i>	
<b>Recommended semester:</b> <i>1<sup>st</sup> and 2<sup>nd</sup> semester in the 1<sup>st</sup> year</i>	
<b>Degree of study:</b> <i>III.</i>	
<b>Course prerequisites:</b> <i>none</i>	
<b>Assessment methods:</b> <i>Participation in laboratory exercises and submission semester work. The test consists of preparing written and oral tests in the range učebných curricula.</i>	
<b>Learning outcomes of the course unit:</b> <i>Adopt sophisticated methods and procedures of science and research in the preparation and processing of materials in their entirety Materials Engineering. Learning the methods of preparation and processing of materials for a special production technique.</i>	
<b>Course contents:</b> <i>Manufacture of metal materials based on ferrous and nonferrous metals. Technology rapid solidification of metallic alloys. The technology of preparation and processing of composite materials based on aluminum, magnesium and titanium. Coating. Chemical and thermal treatment. Production and application technology of ceramic materials. Powder metallurgy. Plastics processing technology. The rheology of the polymers, the polymer melt flow analysis. Basic processing technologies thermoplastics. Cyclic processes polymer processing. Technology, a mixture of thermoplastics. Technology finishes polymers. Technologies of laminates. Technology and micro-mechanical processes in the manufacture of composite polymers. The joining of ceramic materials to metal. Technology of production of glass optical fibers. Machining of ceramic materials. Machining reinforced plastics.</i>	
<b>Recommended of required reading:</b> [1] <i>BLAŠČÍK, F. a kol.: Technológia tvárnenia, zlievárenstva a zvarovania. Bratislava, ALFA, 1988, 830 s.</i> [2] <i>PROKSA, M. a kol.: Materiály a technológie. Príručka. Bratislava, STU, 135 s. ISBN 80-227-0628-0</i> [3] <i>LETKO, I. - MEŠKO, J. - VRÁBEL, P.: Priemyselné technológie I. Žilina, ZVSI, 2001, ISBN 80-968605-1-8</i> [4] <i>LETKO, I. - MEŠKO, J. - VRÁBEL, P. - PIK, J.: Priemyselné technológie II. Žilina, ZVSI, 2002, ISBN 80-968605-3-4</i>	
<b>Language:</b> <i>Slovak</i>	
<b>Remarks:</b> <i>The subject is provided in the winter and the summer semester in the first year. The course is elective.</i>	

**Evaluation history***Total number of students assessed: 8*

A	B	C	D	E	FX
37,5	50,0	0,0	12,5	0,0	0,0

**Lecturers:** *Assoc. prof. Ing. Harold Mäsiar, CSc.***Last modification:** *15.4.2014***Supervisor:** *prof. Ing. Vojtěch Hrubý, CSc., guarantee of the study program “Technologies and Materials in Mechanical Engineering“, Assoc. prof. Ing. Ondrej Híreš, CSc., Assoc. prof. Ing. Viliam Cibulka, CSc. – together-guarantors.*