

**Information sheet for the course**  
**Constructional materials in special technology**

<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>ŠST/I/3-14/d</i>			<b>Course unit title:</b> <i>Constructional materials in special technology</i>		
<b>Type of course unit:</b> <i>compulsory</i>					
<b>Planned types, learning activities and teaching methods:</b> <i>lectures - 2 hours weekly, laboratory seminars - 1 hour weekly on-site method</i>					
<b>Number of credits:</b> 3					
<b>Recommended semester:</b> <i>2<sup>nd</sup> semester in the 1<sup>st</sup> year (full-time)</i> <i>2<sup>nd</sup> semester in the 1<sup>st</sup> year (part-time)</i>					
<b>Degree of study:</b> <i>II. (engineer)</i>					
<b>Course prerequisites:</b> <i>Material Science I., Material Science II.</i>					
<b>Assessment methods:</b> <i>100% attendance on seminars, 60 % attendance on lectures, successful submission of the seminar paper, proof of acquired knowledge from the subject with using oral and written examination</i>					
<b>Learning outcomes of the course unit:</b> <i>The course will provide knowledge about materials used for special technology productions, information about properties, structure and work conditions of these materials. Examples of application of these materials, criteria for their functionality, high strength materials.</i>					
<b>Course contents:</b> <i>Classification of constructional materials, their application in special technology, relation between inner structure and material properties. Deformation structure, plastic and elastic deformation. Crystallization processes, structure of cast materials structure. Heat, chemical-heat and thermo-mechanical treatment. Characteristics of main material groups - Iron alloys, light and non-ferrous alloys, composites and plastics. Stainless steels with corrosion and creep resistance. High strength steels, classification and strengthening principles. Titan and its alloys. Basics of composite materials.</i>					
<b>Recommended of required reading:</b> <i>SKOČOVSKÝ, P. A KOL.: Náuka o materiáli, Bratislava: ALFA, 1996</i> <i>SKOČOVSKÝ, P. A KOL.: Konštrukčné materiály, Žilina: EDIS, 2000</i> <i>PTÁČEK, L. A KOL.: Náuka o materiálu I., Brno: Akademické NAKLADATELSTVÍ CERM, 2003</i> <i>HÍREŠ, O.: Fyzikálna metalurgia ocelí a ich tepelné spracovanie, Trenčín: FŠT TnU AD vo vydavateľstve GC-TECH Trenčín, 2006</i>					
<b>Language:</b> <i>Slovak, English</i>					
<b>Remarks:</b>					
<b>Evaluation history:</b> <i>Total number of students being evaluated: 191</i>					
A	B	C	D	E	FX
10,47	23,04	23,56	23,04	15,71	4,19
<b>Lecturers:</b> <i>Assoc.prof. Ing. Ondrej Híreš, CSc.</i> <i>Ing. Mária Ličková, PhD, Ing. Igor Barényi, PhD.</i>					
<b>Last modification:</b> <i>15.4.2014</i>					
<b>Supervisor:</b> <i>prof. Ing. Jiří Balla, CSc., guarantee of the study program "Special Mechanical Engineering Technology".</i>					