

Information sheet for the course Thermal Treatment and Surface Finishing

University: Alexander Dubček University of Trenčín					
Faculty: Faculty of special technology					
Course unit code: SAOA/B/3-13/d			Course unit title: Thermal Treatment and Surface Finishing		
Type of course unit: optional					
Planned types, learning activities and teaching methods: lectures - 2 hours weekly, laboratory seminars - 1 hour weekly - on-site method					
Number of credits: 2					
Recommended semester: 5 th semester in the 3 rd year (full-time) 5 th semester in the 3 rd year (part-time)					
Degree of study: I. (bachelor)					
Course prerequisites: Material Science I., Material Science II.					
Assessment methods: 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					
Learning outcomes of the course unit: 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.					
Course contents: 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.					
Recommended of required reading: SKOČOVSKÝ, P. A KOL.: <i>Náuka o materiáli</i> , Bratislava: ALFA, 1996 SKOČOVSKÝ, P. A KOL.: <i>Konštrukčné materiály</i> , Žilina: EDIS, 2000 PTÁČEK, L. A KOL.: <i>Náuka o materiálu I.</i> , Brno: Akademické NAKLADATELSTVÍ CERM, 2003 HÍREŠ, O.: <i>Fyzikálna metalurgia ocelí a ich tepelné spracovanie</i> , Trenčín: FŠT TnU AD vo vydavateľstve GC-TECH Trenčín, 2006					
Language: Slovak, English					
Remarks:					
Evaluation history Total number of students being evaluated: 0					
A	B	C	D	E	FX
0	0	0	0	0	0
Lecturers: Assoc.prof. Ing. Ondrej Híreš, CSc. Ing. Mária Ličková, PhD, Ing. Igor Barényi, PhD.					
Last modification: 15.4.2014					
Supervisor: prof. Ing. Alexej Chovanec, PhD., guarantee of the study program „Vehicles Maintenance and Repair“					