

Information sheet for the course: **Material Science II**

University: Alexander Dubček University of Trenčín	
Faculty: Faculty of Industrial Technologies in Púchov	
Course unit code: MI-PV-B-20	Course unit title: Material Science II
<p>Form, scope and method of educational activity: Form of study: Lecture / Seminar / Laboratory tutorial Recommended number of lessons (hours): Weekly: 2 / 2 / 0 During the semester: 24 / 24 / 0 Method of study: combined method Lecture: 24 hours Seminar: 24 hours Laboratory tutorial: 0 hours</p>	
Number of credits: 5	
Recommended semester: 5	
Degree of study: The 1rd degree of study	
Course prerequisites: KMI/MI-P-3/21	
<p>Assessment methods: Assessment during the semester: Summary assessment of work results during the semester = 40 points Semester work and independent work during the semester. A student who obtains at least 20 points in the interim evaluation can apply for the exam. Assessment of exam results = 60 points Grading scale: Grade A: 91 – 100 points Grade B: 81 – 90 points Grade C: 71 – 80 points Grade D: 61 – 70 points Grade E: 55 – 60 points Grade FX: less than 55 points</p>	
<p>Learning outcomes of the course unit: The student has acquired knowledge and skills in the field of thermal modification of the structure and properties of steel processing and chemical - thermal processing. He will gain knowledge about ways to improve properties surface of parts to increase hardness, increase resistance to wear, fatigue, corrosion or high temperatures.</p>	
<p>Course contents: Plastic deformation. Recovery and recrystallization. Heat treatment. Austenitization. Use of ARA and IRA diagrams in heat treatment. Pearlitic transformation. Annealing. Hardening - martensitic and bainitic transformation. Indulgence. Mechanical - heat treatment. Chemical - heat treatment.</p>	
<p>Recommended of required reading: GABRIŠOVÁ,Z., BRUSILOVÁ, A.: Heat treatment, STU Bratislava, 2019, ISBN 978-80-227-4894-0. PTÁČEK, L. : Material science I, II . Academic publishing house CERM, Brno,2002. SKOČOVSKÝ, P., BOKUVKA O., KONEČNÁ, R., TILLOVÁ, E.: Material science for</p>	

engineering departments. University of Zilina EDIS – publishing house University of Zilina, 2001, ISBN 80-7100-831-1.

KONEČNÁ, R., TILLOVÁ, E, ŠUPÍK, V., SKOČOVSKÝ, P.: Instructions for exercises from Material Science II. ŽU EDIS Žilina. 2001.

MARTINKOVIČ, M., HUDÁKOVÁ, M., MORAVČÍK, R.: Material science II - Instructions for exercises. STU Bratislava 2001.

BEZECNÝ, J.: Formation of cracks and fractures during heat treatment of steels.TnUAD. Trenčín 2007. E-learning TnUAD.

Language:

Slovak

English

Remarks: Compulsory elective course

Evaluation history:

Total number of graded students:

A	B	C	D	E	FX
0.0	0.0	0.0	100.0	0.0	0.0

Lecturers: doc. Ing. Jan Krmela, PhD., Ing. Mariana Janeková, PhD.

Last modification: : 26.05.2022

Supervisor: doc. Ing. Jan Krmela, PhD.