Information sheet for the course: Technical Mineralogy and Crystallography

University: Alexander Dubček University of Trenčín	
Faculty: Faculty of Industrial Technologies in Púchov	
Course unit code: MI-I-PV-4B	**Course unit title:** Technical Mineralogy and Crystallography

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:** attendance method

Number of credits: 5

Recommended semester: 2.

Degree of study: The 2nd degree of study

Course prerequisites:

Assessment methods:
Assessment during the semester:
Summary assessment of work results during the semester = 40 points
Active and individual work during semester.

Final assessment:
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

Learning outcomes of the course unit:
Student knows the basic regularities of external crystal shape, classification of crystal shapes, determination of physical properties which enables identification of crystals and to obtain information about microstructure and texture of materials. Student knows basic rock forming and technical minerals.

Course contents:
Basic terms in technical mineralogy and crystallography.
Formation of crystals and its properties, elements of morphological crystal boundary, simple shapes and connections. Significant rock forming and technical minerals.
Basic crystallographic principles, crystallographic systems, classification of crystal shapes. Classification of crystalline substances, types of bonds, diffraction methods.
Physical properties of minerals, density, magnetic and electrical properties.
Optical properties – index of refraction, double refraction, colour and tint, fissionability and synthetic materials.
The methods and knowledge application on utilitarian natural and synthetic materials.

Recommended of required reading:
GREGEROVÁ, M., FOJT, B., VÁVRA, V.: Mikroskopie horninotvorných a technických minerálů. 2002, MZM Brno a PrF MU Brno, 1. vyd., ISBN 80-7028-195-2
KOMAN, M., MAROSZOVÁ, J.: Technológia anorganockých materiálov. STU FCHPT Bratislava, 2019, 278 s., ISBN 978-80-227-4872-8.
PROKEŠOVÁ, R., SPIŠIAK, J.: Všeobecná geológia, mineralógia a petrológia, Banská Bystrica: Belianum. Vydavateľstvo Univerzity Mateja Bela v Banskej Bystrici, 2020, ISBN: 9788055700786
BOYKO, S.V. 2015: https://infocom-m.ru/sk/gidroizolyaciya/kristallografiya-vse-zapisi-v-kategorii-kristallografiya-kristallograficheskie-osi-parametry-i-inde.html
CUMHUR AYDINALP: An Introduction to Mineralogy. In: AYDINALP, C.: An Introduction to the Study of Mineralogy, 1st. Chapter. IntechOpen. 2012, ISBN: 978-953-307-

896-0
ZUBEREC, J.: Nerastné suroviny Slovenska, 2005, Vydavateľ: ŠGÚDŠ, ISBN: 80-88974-77-1
ČÍČEL, B., NOVÁK, I., HORVÁTH, I.: Mineralógia a kryštalochémia ílov. Veda, Bratislava 1981.
E-learning TnUAD.

Language:
English

Remarks:
Compulsory elective course / Profile course

Evaluation history: 5
Total number of graded students:

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

Lecturers: prof. RNDr. Mariana Pajtášová, PhD., Ing. Zuzana Mičicová, PhD., Ing. Mariana Janeková, PhD., Ing. Iveta Papučová, PhD.

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Supervisor: prof. RNDr. Mariana Pajtášová, PhD.