

Information sheet for the course: Polymeric Material Analysis

University: Alexander Dubček University of Trenčín	
Faculty: Faculty of Industrial Technologies in Púchov	
Course unit code: MI-I-PV-5CD	Course unit title: Polymeric Material Analysis
Form, scope and method of educational activity:	
Form of study: Lecture / Seminar / Laboratory tutorial	
Recommended number of lessons (hours):	
Weekly: 2 / 1 / 2 During the semester: 24 / 12 / 24 Method of study: attendance method	
Number of credits: 6	
Recommended semester: 2	
Degree of study: The 2 nd degree of study	
Course prerequisites: MI-I-P-3 Polymeric Materials	
Assessment methods:	
Assessment during the semester:	
Summary assessment of work results during the semester = 40 points	
Semestral work (project) = 20 points.	
Active participation in laboratory exercises, laboratory protocols = 20 points.	
Final assessment:	
Assessment of exam results = 60 points	
Written and oral exams	
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:	
The student knows the basic principles of experimental methods for evaluating the properties of polymeric materials and knows how to apply them in practice.	
Course contents:	
Methods of investigation of polymeric materials.	
Chromatographic methods and their characterization. Rubber process analysis.	
Chromatography. Different types of chromatography.	
and their characterization.	
UV and VIS spectroscopy.	
Infrared (IR) and Raman spectroscopy.	
X-ray fluorescence spectrometry.	
Nuclear magnetic resonance (NMR) spectroscopy.	
Thermal analysis. Characterization of selected methods of thermal analysis.	
Differential thermal analysis (DTA).	
Thermogravimetry (TG). Parameters affecting TG.	
Differential scanning calorimetry (DSC).	
Dynamic-mechanical analysis (DMA).	
Mechanical and physical testing of polymers.	
Recommended of required reading:	
STUART B.H.: Polymer Analysis. John Wiley and Sons, Chichester, p. 302, 2002. ISBN 0-471-81363-X.	
Thermal Analysis of Polymeric Materials: Methods and Developments, K. Pielichowski, edit. Vol. 1, p. 672, 2022. ISBN:9783527347827.	
E-learning TnUAD.	
Language:	
English	
Remarks:	

Compulsory elective course / Profile course

Evaluation history: 0

Total number of graded students:

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

Lecturers: doc. Ing. Katarína Moricová, PhD., doc. Ing. Vladimíra Krmelová, PhD., Ing. Jana Pagáčová, PhD., doc. Mgr. Jana Šulcová, PhD., Ing. Andrea Feriancová, PhD., Ing. Ivan Labaj, PhD., Ing. Iveta Papučová, PhD.

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Supervisor: prof. RNDr. Mariana Pajtášová, PhD.