

Information sheet for the course: Physical Chemistry of Materials

University: Alexander Dubček University of Trenčín	
Faculty: Faculty of Industrial Technologies in Púchov	
Course unit code: MI-PV-A-12	Course unit title: Physical Chemistry of Materials
Form, scope and method of educational activity:	
Form of study: Lecture / Seminar / Laboratory tutorial	
Recommended number of lessons (hours):	
Weekly: 2 / 2 / 2 During the semester: 24 / 24 / 24 Method of study: attendance method	
Number of credits: 5	
Recommended semester: 3.	
Degree of study: The 1st degree of study	
Course prerequisites:	
Assessment methods:	
Assessment during the semester:	
Summary assessment of work results during the semester = 40 points	
The evaluation will be awarded for 100% participation in laboratory exercises and submission of protocols from laboratory exercises (max. 20 points) and evaluation from control tests (it is necessary to obtain at least 60% of the total point evaluation from control tests) = max. 20 points A student who obtains at least 32 points from the interim assessment can apply for the exam.	
Final assessment:	
Assessment of exam results = 60 points	
The exam consists of answering theoretical questions from the subject. The student will be awarded a grade if he obtains at least 32 points out of the total number of 60 points allocated for the exam.	
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 is familiar with the physical laws governing chemical processes in materials. Demonstrates knowledge of the structure and description of states of matter, can explain ongoing physicochemical and chemical processes. He understands the basics of chemical balances and the conduction of electricity in electrolyte solutions. Can apply chemical kinetics to various chemical reactions.	
Course contents:	
Basic concepts of physical chemistry.	
Structure and properties of substances.	
The first law of thermodynamics.	
Thermochemistry.	
The second law of thermodynamics.	
Phase equilibria.	
Chemical balance.	
Electrolyte solutions.	
Equilibrium electrochemistry.	
Chemical kinetics.	
Recommended of required reading:	
ATKINS, P.W.: Fyzikálna chémia. 6. vydanie. Oxford –STU, Bratislava 1999. ISBN 80-227-1238-8.	
MOORE, W.J.: Fyzikálna chémia. 4. vydanie. SNTL Praha, 1979.	
REGULI J.: Fyzikálna chémia pre bakalárske štúdium. Typi Universitatis Tyrnaviensis, TrU,	

Trnava 2015. ISBN 978-80.8082-868-4.

NOVÁK, J. a kol.: Fyzikální chemie: bakalářský kurs. VŠCHT Praha 2005. ISBN 80-7080-559-5.

ULICKÝ, L.: Fyzikálna chémia I, STU, BRATISLAVA 1996.

BISKUPIČ, S. a kol.: Príklady z fyzikálnej chémie I, II. STU Bratislava, 1996. ISBN 80-227-0833-X, ISBN 80-227-0852-6.

ŠIMON, P. a kol.: Laboratórne cvičenia z fyzikálnej chémie. STU Bratislava, 1998. ISBN 80-227-1113-6.

E-learning TnUAD.

ATKINS, P. W.: Physical Chemistry. Oxford University Press; 5 edition (1994), ISBN: 0-19-855730-2.

MONK, P. M. S.: Physical Chemistry: Understanding our Chemical World. Wiley; 1 edition (2004). ISBN: 0-471-49181-0.

ALBERTY, R.A., SILBEY, R.J.: Physical Chemistry. Wiley; 2 edition (1996). ISBN: 0-471-10428-0.

Wilde, B.: Principles and Practices of Physical Chemistry. NY RESEARCH PRESS (2016). ISBN 1632384833.

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. Mgr. Jana Šulcová, PhD.

Last modification: 31.08.2022

Supervisor: doc. Ing. Jan Krmela, Ph.D.