

Information sheet for the course
Selected Chapters from Applied Inorganic Chemistry in Material Engineering

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>Faculty of Industrial Technologies in Púchov</i>	
Course unit code: <i>MI-I-PV-36</i>	Course unit title: <i>Selected Chapters from Applied Inorganic Chemistry in Material Engineering</i>
Type of course unit: <i>optional</i>	
Planned types, learning activities and teaching methods: <i>Object of state examination method</i>	
Number of credits: <i>2</i>	
Recommended semester: <i>4th semester in the 2nd year full-time</i> <i>6th semester in the 3rd year part-time</i>	
Degree of study: <i>the 2nd degree of study (Engineer's degree)</i>	
Course prerequisites: <i>none</i>	
Assesment methods: <i>Prosperous granduation of object of state examation</i>	
Learning outcomes of the course unit: <i>The students knows describe material properties of inorganic substanes, describes the kinds of chemical bonds in componnds and some of readions</i>	
Course contents: <i>States of chemical substnces – basic characteristic</i> <i>Chemical thermodynamic: internal energy and enthalpy, their imprortance</i> <i>Entropy and Gibbs energy, conditions of spotaneons processes</i> <i>Chemical equilibrium, equilibrium constant</i> <i>Kinetics, rate lows</i> <i>The effect of concentration, temperature and catalyst on reaction rate</i> <i>Acids and basic (Arrhenins, Bronsted and Lewis theory)</i> <i>Protolytic reaction: neutralization and hydrolysis</i> <i>Precipitation reactions: kinds of precipitation reactions, product of dissolvation</i> <i>Reactions of complex formation: complex, chromophore</i> <i>Redox reactions: reducing and oxidizing agets, redox potencial metals, nerust equation</i> <i>Wave mechanic: wavv function, atomic orbitals, the Pauli principe, Hunds rule the Pauli Principle, the anfoban principe, electron configurations of atoms and ions</i> <i>Physical essence of chemical bond ings and their charakteristics</i> <i>Kinds of chemical bonds and their substance</i> <i>Bonding and material properties of hydrogen, boron, carbon, modifications, carbonic acid</i> <i>Of silicon, silica, ammonia, oxides, hydrogenperoxide, sulfur, halogens, metallic elements</i> <i>Metallic s-and d-elements</i>	
Recommended of required reading: <i>Jóna E., Ondrušová D., Pajtášová M.: Priemysel'ná anorganická chémia I: Všeobecná časť EAN 9788080752378. ISBN: 978-80-8075-237-8, r. 2007</i> <i>Garaj, J.: Chémia – učebné texty pre nechemické odbory, Trenčín 2005</i>	

Language: <i>Slovak</i>					
Remarks:					
Evaluation history:					
A	B	C	D	E	FX
Lecturers: <i>prof. Ing. Eugen Jóna, DrSc.</i>					
Last modification: <i>31.03.2014</i>					
Supervisor: <i>prof. Ing. Darina Ondrušová, PhD.</i>					