Information sheet for the course
Selected Chapters from Technology of Production of Thin Layers and Coatings

University: *Alexander Dubček University of Trenčín*	
Faculty: *Faculty of Industrial Technologies in Púchov*	
Course unit code: *M-PV-7*	**Course unit title:** *Selected Chapters from Technology of Production of Thin Layers and Coatings*
Type of course unit: *optional*	
Planned types, learning activities and teaching methods:	
Number of credits: *4*	
Recommended semester: *Obligatory to complete at the latest in the half of the standard length of study*	
Degree of study: *the 3rd degree of study (PhD. degree)*	
Course prerequisites: *Completing of all obligatory and obligatory/optional courses of the curriculum prescribed in the study part of the doctoral study programme including the course with unit code M-PV-I Technology of Production of Thin Layers and Coatings, satisfying all requirements for admission to the dissertation examination*	
Assesment methods: *Successful completing of the subject of the dissertation examination*	
Learning outcomes of the course unit: *The student successfully completes the subject of the dissertation examination*	
Course contents: *Surface of the material and its function. Effect of surface roughness on the quality of surface treatment. Diffusion mechanisms in crystalline materials. Ficks´s laws. Surface treatment before coating. Combined chemical and heat treatment PVD, CVD, CVD-PACVD, PVD-PAPVD. (Coatings created from the gaseous phase, from solutions, melted, partially-melted and solid phases). Single-component, two-component, multicomponent mono and multilayer coatings, mono and multiphase, nanocomposite and functionally graded – FGM Magnetron sputtering, thermal diffusion and diffusion coating. Wear tests.*	
Recommended references and resources: 1. *Macek,K.,Zuna,P., Janovec,J.:Tepelné úpravy kovových materiálů; Vydavatelství ČVUT, Praha 2001.* 2. *ASM Handbook, Vol. 8, (1973), ASM International, Materials Park, OH 44073.* 3. *Musil,J., Vyskočil,J.:Tenké vrstvy nitridu titanu, Academia, Praha,1989.* 4. *Zborníky „Vrstvy a povlaky". Bratislava: Slovenská elektrotechnická spoločnosť, ISBN 80-968711-7-X, ČasopisY „Tribotechnika".* 5. *A.Anders, A.: Handbook of Plasma Immersion Ion Implantation and Deposition, Wiley-VCH, 2000.* 6. *AFONIN, B.K. and ERMAKOV, V.S. Metals and Alloys: Handbook NPO Professional, 2003.* 7. *J.Georges, D.Cleugh: Active Screen Plasma Nitriding, Stainless Steel 2000, ed. T.Bell, K.Akamatsu.*	

8. J. Reece Roth: Industrial Plasma Engineering, IoP, 2001

Language: *Slovak*

Remarks: *none*

Evaluation history: *Total number of classified students : 0*

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

Lecturers: *prof. Ing. Františka Pešlová, PhD.*

Last modification: *30.04.2014*

Supervisor: *prof. Ing. Darina Ondrušová, PhD.*