

Information sheet for the course Laboratory methods in working environment

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>Faculty of Health Care</i>	
Course unit code: <i>LMPracPr/e</i>	Course unit title: <i>Laboratory methods in working environment</i>
Type of course unit: <i>compulsory</i>	
Planned types, learning activities and teaching methods: <i>Lecture: 1 hour weekly/13 hours per semester of study; full-time</i> <i>Seminar: 1 hour weekly/13 hours per semester of study; full-time</i>	
Number of credits: 2	
Recommended semester: <i>6th semester in the 3rd year (part-time)</i>	
Degree of study: <i>I (bachelor)</i>	
Course prerequisites: <i>none</i>	
Assessment methods: <i>To obtain credits for the course, a student must pass an oral or written examination (50 points).</i> <i>- Active participation at student practical exercises (0-5 points).</i> <i>- Work out protocols from practical exercises (0-5 points).</i> <i>- Pass the written test from the problem presented during the lectures (0-80 points).</i> <i>To obtain A, a student must score at least 70 points, to obtain B, a student must score at least 60 points, to obtain C, a student must obtain at least 50 points, to obtain D, a student must obtain at least 40 points, and finally to obtain E, a students must to obtain at least 30 points.</i>	
Learning outcomes of the course unit: <i>After the completion of the course a student acquires independent use of laboratory methods used in the sampling and analysis of ambient air, indoor air of buildings and working climate. A student can explain the application of physicochemical methods, and practical experience sampling, and subsequent qualitative and quantitative analysis of air samples (chemicals, biological materials and physical agents) using modern equipment and instrumentation.</i>	
Course contents:	
Lectures:	
<ol style="list-style-type: none"> 1. <i>Basic definitions – working environment.</i> 2. <i>Air pollutants.</i> 3. <i>Exposure limits.</i> 4. <i>Air sampling – chemicals.</i> 5. <i>Air sampling – solid aerosol.</i> 6. <i>Analyses of air sampling – chemicals.</i> 7. <i>Analyses of air sampling – solid aerosols.</i> 8. <i>Air sampling and analyses of biological material.</i> 9. <i>Physicochemical methods: spectrometry, mass spectrometry, gas chromatography.</i> 10. <i>Provision of the quality measurement results, accreditation.</i> 11. <i>Physical factors in the working environment: noise, lighting, climatic conditions.</i> 12. <i>Occupational exposure assessment.</i> 	
Practical exercises:	
<ol style="list-style-type: none"> 1. <i>Gas chromatography - preparation of reagents.</i> 2. <i>Gas chromatography – experimental analysis.</i> 3. <i>Gas chromatography – validation and interpretation of results.</i> 4. <i>Liquid chromatography – preparation of reagents.</i> 5. <i>Liquid chromatography – experimental analysis.</i> 	

6. *Liquid chromatography – validation and interpretation of results.*
7. *Spectrofotometry – preparation of reagents.*
8. *Spectrofotometry – experimental analysis.*
9. *Spectrofotometry – validation and interpretation of results.*

Odporúčaná literatúra:

1. *BUCHANCOVÁ, J., a kol.: 2003. Pracovné lekárstvo a toxikológia, Osveta 2003*
2. *STN EN 481 Určenie veľkosti frakcií na meranie častíc rozptýlených vo vzduchu*
3. *STN EN 689 Ovzdušie na pracovisku. Pokyny na hodnotenie inhalačnej expozície chemickým látkam na porovnanie s limitnými hodnotami a stratégia merania*
4. *Nariadenie Vlády SR č.471/2011*

Language: *Slovak*

Remarks:

Evaluation history:

Number of evaluated students: 59

a	b	c	d	e	f
54.24%	22.03%	16.95%	6.78%	0.00%	0.00%

Lectures: *doc. MUDr. Mária Štefkovičová, PhD.*

Last modification: *22.4.2014*

Supervisor: *doc. MUDr. Jana Slobodníková, CSc.*