

Information sheet for the course
Laboratory methods in microbiology and biology of environment

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>Faculty of Health Care</i>	
Course unit code: <i>LMMikBŽP/d</i>	Course unit title: <i>Laboratory methods in microbiology and biology of 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>4th semester in the 2nd year (full-time)</i>	
Degree of study: <i>I (bachelor)</i>	
Course prerequisites: none	
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 general overview in the field of investigation of microbiological and biological indicators in environmental samples. A student will learn practical processing of samples according to their nature and objective examination; assessment of samples and their comparison to the set limits.</i>	
Course contents:	
Lectures:	
<ol style="list-style-type: none"> 1. <i>The concept of the Ministry of Environment and principles of occupational safety and health in microbiology laboratory.</i> 2. <i>Culture media - distribution, preparation, application.</i> 3. <i>Testing methods in microbiology (microscopy, culture, biochemical).</i> 4. <i>Microbiological food analysis, objectives, legislation.</i> 5. <i>Qualitative and quantitative microbiological parameters in food.</i> 6. <i>Microbiological analysis of drinking water.</i> 7. <i>Testing procedures in water samples.</i> 8. <i>Microbiological analysis of surface water.</i> 9. <i>The processing of dross from the environment.</i> 10. <i>Biological inspection of sterilizer and autoclave efficiency – objections and procedures.</i> 11. <i>Testing procedures in biology of living environment.</i> 12. <i>Biological analysis of drinking water.</i> 13. <i>Biological analysis of surface water.</i> 	
Practical exercises:	
<ol style="list-style-type: none"> 1. <i>Testing methods in microbiology.</i> 2. <i>Culture Media – vaccination.</i> 3. <i>Preparation of Gram stains, preparation and assessment of preparative.</i> 4. <i>Practical testing of food samples for qualitative and quantitative indicators, assessment</i> 	

and calculation.

5. *Practical microbiology testing of drinking water, sample processing, identification of bacterial strains.*
6. *Biochemical identification of bacterial strains.*
7. *Microbiological sample testing of surface water.*
8. *Microbiological testing of dross from the environment (healthcare facilities, food service).*
9. *Biological analysis of drinking water, sample processing and assessment.*
10. *Biological analysis of surface water, sample processing and assessment.*
11. *Processing and assessment of biological samples to check the effectiveness of sterilizers and autoclaves.*

Recommended of required reading:

1. VOTAVA, M. 1999, *Kultivační pŕdy v lékařské mikrobiologii*. Brno:Hortus.1999. ISBN 80-238-5058-X
2. SCHINDLER, J. 2010: *Mikrobiologie pro studenty zdravotnických oborů*. 1. vydanie Praha: Grada Publishing a.s. 2010. ISBN 978-80-247-3170-4
3. BEDNÁŘ, M. a kol.: *Lékařská mikrobiologie* . 1. vydanie. Marvil s.r.o.1999
4. GÖRNER, F., VALÍK, L. : *Aplikovaná mikrobiológia požívatín*. 1.vydanie. Malé Centrum Bratislava 2004. ISBN 80-967064-9-7
5. *STN EN 7218 Všeobecné požiadavky a pokyny na mikrobiologické skúšanie*. SÚTN Január 2008
6. *Vyhláška MZ SR 309/2012 o požiadavkách na vodu určenú na kúpanie*. Zbierka zákonov č.309/2012, čiastka 76
7. *Nariadenie vlády SR 496/2010 , ktorým sa dopĺňa NV SR č. 354/2006 Z. .z., ktorým sa ustanovujú požiadavky na vodu určenú na ľudskú spotrebu a kontrolu kvality vody určenej na ľudskú spotrebu*. Zbierka zákonov č. 354/2006, čiastka 124 a Zbierka zákonov č. 496/2010, čiastka 188

Language: Slovak

Remarks:

Evaluation history:

Number of evaluated students: 59

a	b	c	d	e	f
57.63%	25.42%	15.25%	1.69%	0.00%	0.00%

Lectures:

doc. MUDr. Mária Štefkovičová, PhD., MPH, PhDr. Katarína Kašlíková

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