

Information sheet for the course Laboratory techniques I.

University: <i>Alexander Dubček University of Trenčín</i>	
Faculty: <i>Faculty of Health Care</i>	
Course unit code: <i>LabTech1/e</i>	Course unit title: <i>Laboratory techniques I.</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: 6 hours weekly/78 hours per semester of study; full-time</i> <i>Supervised practical output: 3 hour weekly/39 hours per semester of study; full-time</i>	
Number of credits: <i>3</i>	
Recommended semester: <i>1st semester in the 1st year (part-time)</i>	
Degree of study: <i>I (bachelor)</i>	
Course prerequisites: <i>none</i>	
Assessment methods: <i>- student obtains credits after the full time participation in the laboratory exercises and the written elaboration of protocols from laboratory exercises. The final evaluation shall take into account the complex individual approach of the student, the quality of the protocols (maximum score: 40) and active approach to laboratory tasks quantified verifiable indicators of acquired laboratory skills (max. 10 points). Student obtains from the part of laboratory exercises together a maximum of 50 points.</i> <i>- for obtaining the particular grades it is necessary to achieve:</i> <i>at least 45 score points for the grade A</i> <i>at least 40 score points for the grade B</i> <i>at least 35 score points for the grade C</i> <i>at least 30 score points for the grade D</i> <i>at least 25 score points for the grade E</i>	
Learning outcomes of the course unit: <i>The student will acquire basic laboratory skills and will be eligible to use laboratory equipment. Student will acquire knowledge by studying of the physicochemical principles of laboratory procedures. Student will acquire knowledge of the basic design of instrumentation of analyzers, their functions and also mastering their basic maintenance. Student will be able to use the theoretical knowledge in the praxis and will have the ability to evaluate and interpret the obtained experimental results.</i>	
Course contents: Lecture: <ol style="list-style-type: none"><i>1. Safety rules in the laboratory</i><i>2. Basic principles of the weighting</i><i>3. Basic principles of titrations</i><i>4. Basic principles of pipettes using</i><i>5. Basic principles of centrifugation</i><i>6. Basic principles of precipitating reactions</i><i>7. Basic principles of filtration</i><i>8. Theoretical principles of titrations</i><i>9. Basic principles of complex reactions</i><i>10. Basic principles of measurement of pH</i> Seminar: <ol style="list-style-type: none"><i>1. The basic organizational structure of the laboratory</i>	

2. *The usage of measuring glass (measuring cylinders, burettes, pipettes, flasks)*
3. *Handling, using and maintenance of automatic pipettes* Basic procedures of weighing
4. *Spine - procedures, the relationship between RPM and RCF, procedures*
5. *Precipitation – basic principles and procedures*
Filtration – basic principles, practical implementation
6. *Volumetric analysis – basic principles and procedures*
7. *Complex reactions*
8. *Determination of pH in various samples*

Supervised practical output:

Contents of supervised practical output is under natural conditions to deepen the theoretical knowledge and practical skills acquired by realization of procedures learned in lectures and seminars.

Recommended of required reading:

1. *ČAKRT, KRUPČÍK, MOCÁK, POLONSKÝ, SILEŠ: Praktikum z analytickej chémie (Alfa), 1989*
2. *KOHOUT J., MELNÍK M. : Anorganická chémia I. CHTF STU Bratislava 1997*
3. *GARAJ A KOL. : Analytická chémia CHTF STU Bratislava , Alfa 1987*

Language: *Slovak*

Remarks: -

Evaluation history: *Number of evaluated students -*

a	b	c	d	e	f
-	-	-	-	-	-

Lectures: *RNDr. Vladimír Meluš, PhD., Mgr. Dorová*

Last modification: *22.4.2014*

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