Course Information Sheet

University: University of Prešov in Prešov

Faculty: Faculty of Humanities and Natural Sciences

Code: 2EKO/LABTE/22Title of Course: Laboratory technics

Form of Study: laboratory classes

Number of contact hours:

per week: 4 laboratory classes

per level/semester: 40 laboratory classes, 30 preparation for laboratory work, 50 self study *Method*: physical presence/traditional classrooms

Number of credits: 4

Semester: 1st semester /1st year of study

Degree/Level: *bachelor*

Prerequisities:

Grading Policy (Assessment/Evaluation): During the semester, it will be mandatory to writting excercises for 40 points and practical excercise for 10 points; to obtain an A rating it is necessary to obtain at least 90%, to obtain an B rating at least 80%, to obtain a C rating at least 70%, to obtain a D rating at least 60 points and to obtain an E rating at least 50%.

Aims and Objectives:

The student will gain an overview of the basic instrumentation of biochemical laboratory, get acquainted with professional terminology, which they will learn to use appropriately. In practical exercises, student will develop their manual skills in handling laboratory equipment and learn to use them in basic biochemical methods for laboratory work.

Syllabus/Indicative Content:

1. Introduction to laboratory technology, safety rules, principles of first aid

2. Laboratory equipment - recognition and purpose of various furniture (walls, tables, shower, hood, windows, air conditioning, etc.)

3. Materials used in the laboratory - getting to know their purpose (paper, glass, metal, cork, rubber ..)

4. Basic laboratory operations - calibration of pipettes and their proper use and care.

5. Basic laboratory operations - weighing, heating, dissolving, suction

6. Mixers, mixers and ultrasound

7. Method of using pH-meter

8. Mechanical separation of substances - filtration, centrifugation, vacuum evaporation

9. Methods of extraction of natural substances - aqueous, using organic solvents, hydrodistillation, maceration, etc.

10. Principle and operation of spectrophotometer - UV / VIS

11. Physical separation of substances - chromatographic technique - TLC

12. Physical separation of substances - chromatographic technique - column chromatography

13. Principle and operation of more advanced analytical equipment - HPLC and GC

Suggested readings:

Bartal, M. 2013, Jednoduché prístrojové metódy v školskom laboratóriu. Bratislava 2013 Steinmetz, W. Common laboratory techniques and practices.2012

WHO. Good Laboratory Practices (GLP).2010

Language of Instruction: slovak

Other course information:

Grading history

А	В	С	D	E	FX
а	b	с	d	e	f
Lecturer/Instructor: RNDr. Daniela Grul'ová, PhD.					
Last update: 9. mája 2022					
Approved by:					