

INFORMATION SHEET OF THE SUBJECT

Code: LMbD41		Name: Laboratory methods in biochemistry	
Cover: Department of Theoretical Disciplines and Laboratory Investigation Methods			
Type of educational activity: Seminar, Practise		Number of credits: 5	Recommended semester: ST
Scope of educational activity (in hours): Weekly: 1/3 For term of study: LS 30,90			Study grade: 1. PO
Method of educational activity:			
Recommended semester	Study programme		
2.year ST	Laboratory Medicine (D1-LVMvZ-22)		
Underlie subjects: LMbD10 - Biochemistry			
Conditions for passing the course: Method of evaluation: Completion by taking an examination Continuous evaluation: none Final evaluation: - oral examination which consist of the one question (max. 80% of evaluation) - preparation of practice protocols and their submission in the oral examination (max. 20% of evaluation) Evaluation: A: 100 – 95%; B: 94 – 89%; C: 88 – 83%; D: 82 – 77%; E: 76 – 71%; FX: 70% and less Finished: exam - oral examination			
Learning outcomes: VV1 After completing the course, the student will master the basic analytical methods in biochemistry VV2 The student will know the principles of instrumental methods used in biochemistry VV3 The student will be able to describe the principles of biochemical analysers VV4 The student will be able to apply individual methods to investigative procedures VV5 The student will be able to distinguish the applicability of each method to other analytes			
Schedule of subject: Seminars: 1) Introduction to Investigative Methods in Biochemistry - Biological Material, Biochemical Examination 2) Analytical phase: principles and technical implementation of optical methods I. 3) Analytical phase: principles and technical implementation of optical methods II. 4) Analytical phase: principles and technical implementation of electrochemical methods 5) Analytical phase: principles and technical implementation of electrophoretic methods I. 6) Analytical phase: principles and technical implementation of electrophoretic methods II. 7) Analytical phase: principles and technical implementation of physical methods (Osmometry, oncometry, ultracentrifugation) 8) Analytical phase: principles and technical implementation of isotopic methods 9) Analytical phase: principles and technical implementation of chromatographic methods I. 10) Analytical phase: principles and technical implementation of chromatographic methods II. 11) Types of analyzers, combination automata, universal automata, specific automata 12) Post-analytical phase: basic interpretation of biochemical examination methods Practise: 1) Quality of work in laboratories 2) Preparation of solutions, dilution of calibrators, preparation of calibration curves 3) Spectrophotometry 4) Nephelometry 5) Dry chemistry 6) Physical examination of morning urine 7) Physical examination of collected urine 8) Chemical examination of morning urine 9) Chemical examination of collected urine 10) Urinary sediment 11) Synovial fluid examination 12) Interpretation of results of biochemical examination methods			
Recommended reading: 1) CIBÍČEK,N.-VACEK,J. a kol.: Principy a využití vybraných analytických metod v laboratorní medicíně. Univerzita Palackého v Olomouci, 2014, Olomouc, ISBN 978-80-244-3951-8 / Moodle 2) ČIERNY,D.: Klinicko-biochemické vyšetrenia – základy, interpretácia vybraných nálezov, 2021, ISBN 978-80-8187-107-8. / Moodle / online:https://portal.jfmed.uniba.sk/clanky.php?aid=447 3) KRIŽANOVÁ, O.: Vybrané biochemické a molekulárne-biologické metódy v lekárskom výskume a medicínskej diagnostike. Multimediálna podpora výučby klinických a zdravotníckych disciplín: Portál Jesseniovej lekárskej fakulty Univerzity Komenského, ISSN 1337-7396. / Moodle / online: https://portal.jfmed.uniba.sk/clanky.php?aid=188 4) SÁDECKÁ,J.: e-Analytické metódy v klinickej chémii, Ústav analytickej chémie STU, 2008. / Moodle			

Language requirements: Slovak

Notes:

The daily combined method consists of: seminars /on-line, discussion group in MS Teams/; practise /attend/
Self-study is supported by e-learning.
100% participation is required.

Prerequisites:

Biochemistry (LMbD10)

Course evaluation:

Assessed students in total: 668

A	B	C	D	E	FX
14%	14%	20%	11%	16%	26%

Lecturers:

RNDr. Mgr. et Mgr. Nicholas Martinka, PhD., examiner, instructor, seminary supervisor

Date of last change: 01.09.2026

Approved by: doc. Ing. Stanislava Blažíčková, PhD., MPH, univ.prof.