

Name of university, Name of faculty: Trnava University

Faculty of Health Care and Social Work

INFORMATION SHEET OF THE SUBJECT

Code: LMmEE34

Name: Clinical biochemistry

Cover: Department of Theoretical Disciplines and Laboratory Investigation Methods

Type of educational activity: Seminar, Practise

Scope of educational activity (in hours):

Weekly: -

For term of study: ZS 12,24

Number of credits: 4

Recommended semester: WT

Study grade:
Master

Method of educational activity:

Recommended semester

Study programme

2. year WT

Laboratory Medicine (E2-LVMvZ-23)

Underlie subjects:

Conditions for passing the course:

Method of evaluation: Completion by taking an examination

Continuous evaluation: none

Final evaluation: - Oral exam, which consist of 1 question (max. 80% of evaluation)

- Preparation of protocols from practical exercises, their hand over during the oral exam and a subsequent interview on the laboratory protocol (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 exam

Learning outcomes:

VV1 The student will be familiar with the work in clinical biochemistry laboratory

VV2 The student is able to correctly indicate and interpret biochemical tests in various clinical conditions

VV3 The student is able to actively assess the accuracy of the indication and interpretation of biochemical laboratory examination

VV4 The student is able to reliably recognize cases of interference and respond to them properly

VV5 The student is able to communicate appropriately with clinicians

VV6 The student is able to respond properly to the finding of erroneous results

VV7 The student is able to orientate in common analytical principles and is familiar with their regularities

VV8 The student is able to follow standard analytical, technical and logistical operating procedures

Schedule of subject:

Seminars:

1) The role of clinical biochemistry in medicine

2) Biochemical analysis of blood

3) Metabolism of haemoglobin and its abnormalities

4) Blood plasma proteins

5) Renal biochemistry

6) Examination of acid-base balance – basic and mixed disorders. Water and electrolyte metabolism disorders – hyper- and hyponatremia, kalemia, chloridaemia

7) Lipoprotein metabolism, clinical-biochemical examinations of lipid metabolism, hyperlipidemia, a new perspective on the interpretation of dyslipidemias

8) Myocardial infarction – cardiomarkers

9) Biochemical examination of cerebrospinal fluid, biochemical diagnostics in cerebrospinal fluid

10) Biochemistry of the gastrointestinal tract

11) Tumor markers – classification in terms of biological function, use of tumor markers in screening, diagnosis and treatment of cancer

12) Bone metabolism

Practise:

1) Practical verification of the principles of biological material collection and patient

preparation before collection, indications of clinical-biochemical examinations, sources of errors in biochemical analysis, interference (determination of glucose on an empty stomach, after a meal)

2) Quality control, reference values, principles of evaluation and interpretation of biochemical findings

3) Examination of POCT - CRP, lipids

4) Chemical examination of urine

5) Examination of urinary sediment – interpretation of findings

6) Electrophoresis of blood serum proteins

7) Calculation of nitrogen balance

8) Examination of the gastrointestinal tract - evidence of Helicobacter pylori infection, test for occult bleeding in the gastrointestinal tract

9) Comparison of two methods, correlation

10) Clinical-biochemical casuistry – analysis I.

11) Clinical-biochemical casuistry – analysis II.

12) Clinical-biochemical casuistry – analysis III.

Recommended reading:

- 1) BIOCHÉMIA. / online: <https://www1.lf1.cuni.cz/~kocna/biochem/obsah1.htm>
- 2) DOBROTA, D. et al.: Lekárska biochémia. 2.prepracované vyd., Osveta, Martin, 2016, ISBN 978-80-8063-444-5.
- 3) POHANKA, M.: Klinická biochemie. Fakulta vojenského zdravotníctví UO, 2017, ISBN 978-80-7231-365-5. / Moodle

Language requirements: Slovak**Notes:**

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

Course evaluation:

Assessed students in total: 9

A	B	C	D	E	FX
22%	22%	22%	11%	22%	0%

Lecturers:

doc. Ing. Stanislava Blažíčková, PhD., MPH, univ.prof., examiner, instructor, seminary supervisor

Date of last change: 01.09.2026**Approved by:** doc. Ing. Stanislava Blažíčková, PhD., MPH, univ.prof.