

### INFORMATION SHEET OF THE SUBJECT

|                                                                                                                                                         |                                   |                                            |                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------------------------|---------------------------------|
| <b>Code:</b> LMbEE23                                                                                                                                    |                                   | <b>Name:</b> Hematology and Transfusiology |                                 |
| <b>Cover:</b> Department of Theoretical Disciplines and Laboratory Investigation Methods                                                                |                                   |                                            |                                 |
| <b>Type of educational activity:</b> Lecture, Practise                                                                                                  |                                   | <b>Number of credits:</b> 4                | <b>Recommended semester:</b> WT |
| <b>Scope of educational activity (in hours):</b>                                                                                                        |                                   |                                            | <b>Study grade:</b> 1. PO       |
| <b>Weekly:</b> -                                                                                                                                        |                                   |                                            |                                 |
| <b>For term of study:</b> ZS 12,24                                                                                                                      |                                   |                                            |                                 |
| <b>Method of educational activity:</b>                                                                                                                  |                                   |                                            |                                 |
| Recommended semester                                                                                                                                    | Study programme                   |                                            |                                 |
| 2.year WT                                                                                                                                               | Laboratory Medicine (E1-LVMvZ-23) |                                            |                                 |
| <b>Underlie subjects:</b>                                                                                                                               |                                   |                                            |                                 |
| <b>Conditions for passing the course:</b>                                                                                                               |                                   |                                            |                                 |
| <b>Method of evaluation:</b> Completion by taking an examination                                                                                        |                                   |                                            |                                 |
| <b>Continuous evaluation:</b> none                                                                                                                      |                                   |                                            |                                 |
| <b>Final evaluation:</b> - oral examination consisting of one question (max. 80% of evaluation)                                                         |                                   |                                            |                                 |
| - preparation of practise protocols, submission of the protocols and a following interview during the practise 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                                                          |                                   |                                            |                                 |
| <b>Finished:</b> exam - oral examination                                                                                                                |                                   |                                            |                                 |
| <b>Learning outcomes:</b>                                                                                                                               |                                   |                                            |                                 |
| VV1 After completing the course, the student will know the theoretical knowledge about hematopoiesis and individual developmental series of blood cells |                                   |                                            |                                 |
| VV2 The student will understand the metabolism and function of haemoglobin and iron in the body                                                         |                                   |                                            |                                 |
| VV3 The student will be familiar with the physiological processes involved in blood clotting and the individual components of this process,             |                                   |                                            |                                 |
| VV4 The student will be able to correctly select a transfusion drug with respect to its indication and blood group systems                              |                                   |                                            |                                 |
| VV5 The student will master the principles of correct selection of blood donors                                                                         |                                   |                                            |                                 |
| VV6 The student will be able to understand the types, production and storage conditions of transfusion drugs                                            |                                   |                                            |                                 |
| VV7 The student will be familiar with the possible complications of haemotherapy and their management                                                   |                                   |                                            |                                 |
| <b>Schedule of subject:</b>                                                                                                                             |                                   |                                            |                                 |
| Lectures:                                                                                                                                               |                                   |                                            |                                 |
| 1) Haematopoiesis - proliferation, differentiation, control of haematopoiesis                                                                           |                                   |                                            |                                 |
| 2) Blood cell development - erythropoiesis, granulocytopoiesis, monocytopenia, thrombocytopoiesis, lymphocyte and plasmocyte formation                  |                                   |                                            |                                 |
| 3) Erythrocytes - morphology of healthy and pathological erythrocytes, erythrocyte metabolism                                                           |                                   |                                            |                                 |
| 4) Haemoglobin - composition and breakdown                                                                                                              |                                   |                                            |                                 |
| 5) Iron metabolism                                                                                                                                      |                                   |                                            |                                 |
| 6) Physiology of haemostasis - vascular wall, endothelial cells, platelets, function of platelets in haemostasis                                        |                                   |                                            |                                 |
| 7) Haemocoagulation system - coagulation factors and inhibitors, physiology of blood coagulation, fibrinolysis                                          |                                   |                                            |                                 |
| 8) Immunohematology - erythrocyte, leukocyte and platelet antigens, anti-erythrocyte antibodies                                                         |                                   |                                            |                                 |
| 9) Blood group systems and their importance in the selection of transfusion drug                                                                        |                                   |                                            |                                 |
| 10) Blood donation - selection and de-selection of blood donors, collection of blood and its components                                                 |                                   |                                            |                                 |
| 11) Types of transfusion drugs - principle of manufacture, storage conditions, indications for administration                                           |                                   |                                            |                                 |
| 12) Complications of haemotherapy and their management                                                                                                  |                                   |                                            |                                 |
| Practise:                                                                                                                                               |                                   |                                            |                                 |
| 1) Microscopy - morphology of healthy erythrocytes                                                                                                      |                                   |                                            |                                 |
| 2) Microscopy - morphology of pathological erythrocytes                                                                                                 |                                   |                                            |                                 |
| 3) Differentiation between healthy and pathological erythrocytes                                                                                        |                                   |                                            |                                 |
| 4) Microscopy - morphology of healthy granulocytes                                                                                                      |                                   |                                            |                                 |
| 5) Microscopy - morphology of pathological granulocytes                                                                                                 |                                   |                                            |                                 |
| 6) Differentiation of healthy and pathological granulocytes                                                                                             |                                   |                                            |                                 |
| 7) Microscopy - morphology of healthy monocytes                                                                                                         |                                   |                                            |                                 |
| 8) Microscopy - morphology of pathological monocytes                                                                                                    |                                   |                                            |                                 |
| 9) Differentiation of healthy and pathological monocytes                                                                                                |                                   |                                            |                                 |
| 10) Microscopy - morphology of healthy lymphocytes                                                                                                      |                                   |                                            |                                 |
| 11) Microscopy - morphology of pathological lymphocytes                                                                                                 |                                   |                                            |                                 |
| 12) Differentiation of healthy and pathological lymphocytes                                                                                             |                                   |                                            |                                 |
| <b>Recommended reading:</b>                                                                                                                             |                                   |                                            |                                 |
| 1) FÁBRYOVÁ, V. a kol.: Imunohematológia a transfúzna medicína pre prax, Grada Publishing, 2012, ISBN 978-80-247-4391-2.                                |                                   |                                            |                                 |
| 2) HAFERLACH, T. a kol.: Kapesní atlas hematologie. Praha:Grada, 2014, ISBN 978-80-247-4787-3.                                                          |                                   |                                            |                                 |
| 3) ŘEHÁČEK, V. a kol.: Transfúzní lékařství, Grada Publishing, 2013 / Moodle                                                                            |                                   |                                            |                                 |
| 4) SAKALOVÁ, A.- BĀTOROVÁ, A. a kol.: Klinická hematológia. Osveta, 2011, ISBN 978-80-8063-324-0.                                                       |                                   |                                            |                                 |

5) ŠKORŇOVÁ,I.- SLAVÍK,L. a kol.: Hemostáza – laboratórne metódy, ich využitie a interpretácia vo vybraných klinických situáciách, P+M, 2020.

**Language requirements:** Slovak

**Notes:**

The daily combined method consists of: lectures /on-line, distance, self-study/; practise /attend/

Self-study is supported by e-learning.

100% participation is required.

Prerequisites:

Hematology and transfusiology (LMbD24)

**Course evaluation:**

Assessed students in total: 4

| A  | B  | C   | D   | E   | FX |
|----|----|-----|-----|-----|----|
| 0% | 0% | 25% | 50% | 25% | 0% |

**Lecturers:**

doc. Ing. Ingrid Škorňová, PhD., lecturer, examiner, instructor

**Date of last change:** 01.09.2026

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