

CLINICAL COURSE III: HEMATOLOGY	
GENERAL INFORMATIONS	
Course coordinator	Asst. Prof. Dario Mandić, MMedBiochem, PhD
Assistant/Associate	Asst: Prof. Vlatka Periša, MD, PhD Marija Milić, MMedBiochem, PhD Danijela Mjeda, MD Maja Lukić, MMedBiochem
Study Programme	Undergraduate University Study of Medical Laboratory Diagnostics
Status of the course	mandatory
Year of study, semester	2 nd year, 4 th semester
ECTS	6
Workload (hours)	Lectures: 10; Seminars: 10; Exercises: 60
Expected number of students	30 - 35
COURSE DESCRIPTION	
Course objectives	
<p>Hematology is both clinical and laboratory science. It constitutes a very important course during the medical laboratory diagnostic study program. Therefore, the aim of this course is to familiarize students with hematology-related activities in clinical and laboratory professions. The students will acquire basic knowledge of clinical hematology, familiarize themselves with the basic principles of clinical hematology, learn to describe the causes and mechanisms of diseases, describe morphological changes in cells and tissues of hematopoietic tissue, and identify and explain the functional consequences of morphological changes. Students will be familiarized with diagnostic methods used in hematology and blood coagulation laboratories, as well as the methods and organization of the work in such laboratories.</p>	
Course requirements and required competences	
There are no specific requirements for this course except those defined in the study program curriculum.	
Learning outcomes relevant to the study program	
1.2, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 3.1, 3.2	
Expected learning outcomes at the course level	
<p>After attending lectures, seminars and exercises, self-learning and successfully passing the exam, the students will be able to:</p> <ol style="list-style-type: none"> 1. critically assess and understand problems in the field of hematology. evaluate hematological entities in theoretical and clinical practice. 2. independently conclude on morphological changes in cells and tissues of hematopoietic tissue. 3. conclude on the functional consequences of morphological changes. 4. independently perform hematology and blood coagulation tests. 5. critically judge and interpret lab results. 6. integrate the knowledge of the methods and organization of hematology and blood coagulation laboratories. 	
Course content	
<p>Lectures: Hematology - Analytical phase; Hematology - Hematology laboratory; Hematology - Performing hematology tests in the post-analytical phase; Biochemical tests; Red blood cells.</p> <p>Seminars: Hemostasis; White blood cells; Methods and aspects of laboratory work.</p>	

Exercises: Determining absorption curve, Determining erythrocytes in the hemocytometer; Determining microhematocrits, erythrocyte constants; Determining reticulocytes, osmotic resistance of erythrocytes; Leukocytes; Determining eosinophils in the chamber, Determining and interpreting a differential blood count; Hematology-work on the counter; Hematology - hemostasis testing: PT, APTT, fg, BT according to IVY, fg concentration; Hematology - hemostasis testing: blood coagulation factors, protein C, S and D-dimers; Hematological and biochemical analysis in hematology: iron metabolism, electrophoresis of serum proteins; Hematological and biochemical analysis of light chains in serum and urine, hemoproteins; Hematology -determining vitamin B12 in folic acid, erythropoietin.

Form of instruction

Lectures; seminars; exercises.

Student obligations

Attending all forms of instruction is mandatory, and the student must sit for all exams. A student can be excused from 30% of every form of instruction. **Missed exercises must be compensated by sitting for an exam.**

Monitoring student learning (Interconnectedness of learning outcomes, teaching methods and grading)

Type of exam: written exam.

Curricular activities	ECTS	Learning outcome	Student participation	Assessment methods	Points	
					Min.	Max.
Attendance: lectures and seminars, exercises	0.5	1-7	Class attendance, Active participation in seminars; Completed exercise and an accepted paper	Records	1	3
	1.5			Paper	6	12
Exam (partial exams)	1	1-7	Entry exam for exercises	Partial exam	10	15
Final exam	3	1-7	Preparation for the final exam	Written exam	8	20
Total	6	1-7			30	50

Valuation of the written part of the final exam

Percentage of correctly solved tasks (%)	Points
60.00-64.99	30
65.00-69.99	33
70.00-74.99	36
75.00-79.99	39
80.00-84.99	41
85.00-89.99	43
90.00-94.99	47
95.00-100	50

Formulation of the final grade:

Points achieved in class are combined with points achieved on the final exam. The grading shall be carried out by using absolute distribution, i.e. shall be based on the final achievement and compared to the numerical system as follows:

A – excellent (5): 80-100 points; B – very good (4): 70-79.99 points; C – good (3): 60-69.99 points; D – sufficient (2): 50-59.99 points.

Mandatory reading (available in the library or in other mediums)		
Title	Number of copies in the library	Availability in other mediums
Labar, B. et al. Hematologija [Hematology]. Zagreb, Školska knjiga, 2017	7	
Additional reading		
<ol style="list-style-type: none"> 1. Softić N. Hematološke laboratorijske pretrage [Hematology Lab Tests]. Sveučilišna naknada Liber, Zagreb 1992 2. Hauptmann E., Črepinko I. Osnove kliničke hematologije [Introduction to Clinical Hematology] ŠK, Zagreb, 1991 3. Mc Kenzie. Clinical laboratory Hematology ed E Zeibig Pearson Education, Inc. Upper Saddle River, New Jersey, 2004 		
Quality monitoring methods ensuring the acquisition of competences upon completion		
An anonymous, quantitative, standardized student survey on the course and the work of professors conducted by the Quality Assurance Office of the Faculty of Medicine Osijek.		