1.	Subject	**HEMATOLOGY**			
2.	Code	MLD – 212			
3.	Study program:	Three-year professional studies of medical laboratory diagnostics			
4.	Conducted by	UKIM – Medical Faculty Department of Internal Medicine			
5.	Degree of education (first or second cycle)	First cycle			
6.	Academic year/semester	II/III-IV	7.	Credits	13
8.	Professor	Head of the Department: Prof. d-r Marija Vavlukis *the lessons are held by all the professors of the Department of Internal Medicine, from the field of Hematology			
9.	Prerequisite	Fulfilled conditions for enrolling in second year			
10.	Goals	Understanding the correlation of hematologic laboratory values with age Differentiating the morphology and the functions of the cell elements Preparation and analysis of peripheral smear, bone marrow aspiration, apparatus of lymph node biopsy and other tumors Preparation for performing laboratory analyses, organizing and planning the amount of laboratory reagents Classification of anemia and malignant hematologic disorders Determining and selecting laboratory diagnostic procedures needed for particular hematologic disorders Independent work on hematology analyzer Independent extraction of vein blood and capillary blood from a finger Independent microscopy Being knowledgeable of the general control when working in a laboratory Recognizing blasts in a peripheral smear and bone marrow Knowing the hematopoietic organs Comparison and interpretation of hematologic analyses			
11.	Content summary: Theoretical lessons (60 lessons): Hematopoiesis, organs in hematopoiesis, structure and function of the hematopoietic organs, fetal hematopoiesis, bone marrow, lymphatic system, mononuclear phagocyte system, blood cells, erythrocytes, leucocytes, thrombocytes, erythropoiesis, granulopoiesis, thrombocytopoiesis Physiological creation, regulation of erythropoiesis, erythropoietin Hemoglobin – structure, function, metabolic processes in erythrocytes, routine hematologic analyses, peripheral smear Introduction to the disorders of the erythropoiesis – anemia, polycythemia, classification of anemia – macrocytic, microcytic, sideropenic, hemolytic anemia, congenital/inherited hemolytic anemia due to a membrane defect, hemolytic anemia immune/non-immune. Leucocytes – granulopoiesis, morphology of leucocytes, congenital anomalies of the leucocytes, lymphocytes in peripheral blood, lymphocytes in tissues, function of the lymphatic and granulopoiesis system, complete blood count, interpretation, specification of viral diseases, bacterial diseases, and malignant diseases. Introduction to hematologic malignant diseases, leukemia, lymphoma, classification and categorization. The importance of laboratory analyses in early detection and diagnosis of leukemia and lymphomas, important hematologic analyses, bone marrow analyses, function, structure, puncture and interpretation of results. Specifications of pediatric hematopoiesis. Hematology analyzer, work control in hematologic laboratories, informatics systems.				

	Practical lessons (60 lessons): Mastering clinical skills and practical use of the gained theoretical knowledge.				
12.	Teaching methods: Interactive theoretical lessons, seminars, practical lessons				
13.	Total classes:		Theoretical lessons: 30 Seminars: 30 Practical lessons: 60		
14.	Organization				
15.	Types of teaching activities		15.1	Lessons: theoretical classes	30
			15.2	Practical lessons, seminars	60 30
16.	Other types of activities		16.1	Training	60
			16.2	Self-supporting practice	
			16.3	Learning at home	
17.	Knowledge assessment		Points		
	17.1	Mid-term exams	4 mid-term exams points – 8.8-16; Cover all the fields of Hematology in different combinations that depend of the group where the student is assigned during the lessons The students can gain between 1.1-2 points on each mid-term exam.		
	17.2	Final exam	Practical part points 16-26 Oral part points 24.2-38 Practical part (according to the skill catalogue) – patient examination, different diagnostic therapy Oral part (integrated) – questions that check the knowledge that is essential for understanding the subject as a whole and for medical practice.		
	17.3	Paper/project (oral presentation)	**Min. – Max.** 1 - 2		
	17.4	Active participation	**Min. – Max.** Theoretical lessons 1 - 3 Practical lessons 10 - 15 Attending the theoretical lessons: 30% - 1 point; 31-60% - 2 points; 61-100% - 3 points Practical lessons (50 lessons with the duration of 4 hours) attendance: 0.1 points; exercise 0.2		
18.	Grading criterion (points/grades)	Up to 59	5 (five) F		
		60-68	6 (six) E		
		69-76	7 (seven) D		
		77-84	8 (eight) C		
		85-92	9 (nine) B		
		93-100	10 (ten) A		
19.	Requirements for obtaining a signature and attending the final	Attending the theoretical and practical lessons and passed mid-term exams			

	examination		
20.	Language	Macedonian	
21.	Method of evaluating the quality of the lessons	Students' anonymous evaluation of the subjects, the professors and collaborators who hold the lessons.	
22.	Literature:		
	22.1	Mandatory literature	
		1.	Internal Medicine textbook
	22.2	Additional literature	