Subject Code Study program: Conducted by	MLD - 221						
	Three-year r		PATHOPHYSIOLOGY MLD – 221				
Conducted by	Thee-year p	Three-year professional studies of medical laboratory diagnostics					
	Department of Pathological Physiology UKIM – Medical faculty, Skopje						
Degree of education (first or second cycle)	First cycle						
Academic year/semester	First/IV 7.	Credits		4			
Professor	Responsible professor: prof. Daniela Pop Gjorcheva, chair of the department The classes are held by all the members of the department						
Prerequisite	Fulfilled condition for enrolment in second year						
Goals	Introduction to the pathophysiological mechanisms that are behind the basic pathological processes and condition in human pathology (fever, hypoxia, inflammation, disorders of the energy and metabolism of nutritional elements), introduction to the mechanisms behind the basic and most common diseases of the organs and systems, introduction to the functional disorders and the clinical and laboratory manifestations that they show. Expected results: Gaining knowledge and skills to understand, explain and discuss the pathophysiological mechanisms of the pathological processes, conditions and diseases, the functional disorders during the most common diseases in human pathology and their clinical/laboratory evaluation and assessment.						
Theoretical lessons: Fever. Hypoxia. Inflammation. Most common disorders of the energy metabolism, nutrient metabolism, fluid-electrolyte balance and acid-base balance. Inflammation. Pathophysiology of the most common disorders of the hemostasis, cardiovascular system, gastrointestinal system, hepatobiliary system, nephron-urinary system and endocrine system. Practical lessons: Dehydrations and hyperhydration, electrolyte disorders Hyperglycemic and hypoglycemic syndrome Dysproteinemia, paraproteinemia Dyslipidemia – primary and secondary Haemostatic disorders – disorders of the vascular and thrombocyte factor Haemostatic disorders – disorders of the coagulation and anticoagulation factor Anemia, polycytemia Quantitative disorders of the leukocyte Disorders of the renal clearance function Icterus Pancreatic exocrine insufficiency							
Parathyroid function	rathyroid function disorders						
	Theoretical c						
Organization		30 hours or 90 lessons (3 EKTS x 30 hours)Theoretical lessons: 30 Preparation of theoretical lessons: 30					
	second cycle) Academic year/semester Professor Prerequisite Goals Content summary: Theoretical lesson Fever. Hypoxia. In metabolism, fluid- most common disc hepatobiliary syste Practical lessons: Dehydrations and Hyperglycemic an Dysproteinemia, p Dyslipidemia – pr Haemostatic disor Haemostatic disor Anemia, polycyter Quantitative disor Disorders of the re Icterus Pancreatic exocrim Thyroid function of Parathyroid functi Teaching methods: Total classes:	second cycle)AcademicFirst/IV7.year/semesterInstantationProfessorResponsibleThe classes aPrerequisiteFulfilled conGoalsIntroductiongathologicalinflammationinflammationintroductionpathologicalinflammationintroductionpathologicalinflammationintroductionthe organs anand laboratoExpected ressGaining knopathology anContent summary:Theoretical lessons:Fever. Hypoxia. Inflammation. Imetabolism, fluid-electrolyte bamost common disorders of the hhepatobiliary system, nephron-uPractical lessons:Dehydrations and hyperhydrationHyperglycemic and hypoglycemDyslipidemia – primary and secHaemostatic disorders – disordeHaemostatic disorders – disordeAnemia, polycytemiaQuantitative disorders of the leuDisorders of the renal clearanceIcterusPancreatic exocrine insufficiencThyroid function disordersParathyroid function disordersTotal classes:Theoretical cl	second cycle)First/IV7.CreditsAcademicFirst/IV7.Creditsyear/semesterResponsible professor: The classes are held byProfessorResponsible condition forGoalsIntroduction to the path pathological processes inflammation, disorder introduction to the medi the organs and systems and laboratory manifes Expected results: Gaining knowledge an pathology and their cliContent summary: Theoretical lessons: Fever. Hypoxia. Inflammation. Most comm metabolism, fluid-electrolyte balance and most common disorders of the hemostasis hepatobiliary system, nephron-urinary sysPractical lessons: Dehydrations and hyperhydration, electrol Hyperglycemic and hypoglycemic syndro Dysproteinemia, paraproteinemia Dyslipidemia – primary and secondary Haemostatic disorders – disorders of the c Anemia, polycytemia Quantitative disorders of the leukocyte Disorders of the renal clearance function Icterus Paractical classes:Pancreatic exocrine insufficiency Thyroid function disordersParathyroid function disordersParathyroid function disordersTheoretical classes:	second cycle) First/IV 7. Credits Professor Responsible professor: prof. Dat The classes are held by all the m Prerequisite Fulfilled condition for enrolmen Goals Introduction to the pathophysiological processes and cond inflammation, disorders of the entit introduction to the mechanisms of the organs and systems, introduc and laboratory manifestations th Expected results: Gaining knowledge and skills to pathophysiological mechanisms diseases, the functional disorders pathology and their clinical/labo Content summary: Theoretical lessons: Fever. Hypoxia. Inflammation. Most common disor metabolism, fluid-electrolyte balance and acid-base most common disorders of the hemostasis, cardiova hepatobiliary system, nephron-urinary system and e Practical lessons: Dehydrations and hyperhydration, electrolyte disord: Hyperglycemic and hypoglycemic syntrome Dyslipidemia – primary and secondary Haemostatic disorders – disorders of the vascular ar Haemostatic disorders – disorders of the coagulation Anemia, polycytemia Quantitative disorders of the leukocyte Disorders of the renal clearance function Icterus Pancreatic exocrine insufficiency Thyroid function disorders: Parathyroid function disorders Gaining methods: Theoretical classes, practical less			

			Learnii	ng at home: 30			
15.	Types of teaching activities		15.1 Lessons: 30				
10.	Types of teaching activities		1011	theoretical			
				classes			
			15.2	Practical lessons	30		
16.	Other types of activities		16.1	Practice	/		
10.			16.2	Self-supporting	Incorporated into the		
			10.2	practice	practical lessons		
			16.3	Learning at home	30		
17.	Knowledge asse	das assesment		Points			
17.	Knowledge assessment17.1Attending and participating in the		Minmax. 3*-10				
			*attending at least 5 of the 15 theoretical classes				
		theoretical lesson		attending at least 5 of the 15 theoretical classes			
	17.2	Attending and	Minmax. 12-15				
	17.2	7.2 Attending and participating in the		The student can miss 3 of the 15 practical lessons			
		practical lessons	The state of thiss 5 of the 10 practical lessons				
	17.3 Mid-term exams						
	17.4			Min. – Max. 45 - 75			
		from both the					
		theoretical and					
	practical lesso						
18.	Grading	Up to 59 points	5 (five) F				
	criterion	From 60 to 68 points	6 (six) E				
	(points/grades)	From 69 to 76 points	7 (seven) D				
	From 77 to 84 points From 85 to 92 points		8 (eight) C				
			9 (nine) B				
		From 93 to 100 points	10 (ten) A			
19.	Requirements	Listed at field 17. Minimum points from the theoretical lessons and attending 12					
	for obtaining a	of the 15 practical lesson	ns				
	signature and						
	attending the	ending the					
	final						
	examination						
20.	Language	Macedonian					
21.	Method of	Anonymous student evaluation of the subject, the professors and the collaborators					
	evaluating the	who hold the lessons.					
	quality of the						
22.	lessons Literature						
۷۷.	22.1	Mandatory literatura					
	22.1	Mandatory literature		Authorized lectures from the professors of the			
		1.	Depart		e professors of the		
		2.			tevska, D. Pop Gjorcheva, D.		
		<i>2</i> .			racticum of basic and		
					ysiology for medical		
				s, Boro Grafika, 201			
	22.2	Additional literature					
L							

1.	O. Vaskova, S. Miceva Ristevska, D. Pop Gjorcheva, D. Miladinova, S. Loparska, V. Majstorov: Basic pathological physiology for medical students, Boro Grafika, 2013
2.	O. Vaskova, S. Miceva Ristevska, D. Pop Gjorcheva, D. Miladinova, S. Loparska: Specialized pathological physiology for medical students, Boro Grafika, 2013
3.	MacFi, Genong: Disease pathophysiology – introduction to clinical medicine, Tabernakul, 2010