I YEAR

	I semester	•	II semester				
Subjects	Lessons	Credits	Validity exam sessions	Subjects	Lessons	Credits	Validity exam sessions
Biophysics	60	3	6	Medical chemistry	90	7	3
Cell morphology and physiology	60	5	3	Anatomy 2	90	7	3
Anatomy 1	90	9	3	Histology and embryology 2	75	6	6
Introduction to medicine	30	2	6	Health promotion	15	1	6
Medical psychology and sociology	75	5	6	Medical ethics	30	2	6
Histology and embryology 1	60	5	3	Introduction to human genetics	60	5	6
Sports and health	30	1		First aid	15	1	6
				Elective subject	15	1	
	405	30			390	30	

II YEAR

II	III semester				IV semester		
Subjects	Lessons	Credits	Validity exam sessions	Subject	Lessons	Credits	Validity exam sessions
Biochemistry 1	105	7	3	Physiology 2	90	6	3
Physiology 1	150	11	3	Biochemistry 2	75	5,5	3
Introduction to immunology	45	3	6	Microbiology with parasitology 1	60	4	3
Biostatistics with medical informatics	45	3	6	Pathological physiology 1	105	7	3
Anatomy 3	90	6	3	Hygiene	75	5	6
				Basics in scientific work	30	1,5	6
				Elective subject	15	1	
	435	30			450	30	



III YEAR

III LEAK							
V semester			VI semester				
Subjects	Lessons	Credits	Validity exam sessions	Subjects	Lessons	Credits	Validity exam sessions
Microbiology with parasitology 2	75	6	3	Pathology 2	120	8	3
Pathological physiology	60	4,5	3	Clinical	92	7	3

2				examination			
Pathology 1	135	9	3	Pharmacology	105	7	3
Clinical examination	93	6	6	Epidemiology	75	5	6
Radiology	60	3	6	Transfusiology	30	2	6
Nuclear medicine	30	1,5	6	Elective subject	15	1	
	453	30			437	30	

# IV YEAR

	VII semester			VIII semester			
Subjects	Lessons	Credits	Validity exam sessions	Subjects	Lessons	Credits	Validity exam sessions
Internal medicine	205	11	6	Internal medicine	150	9,5	6
Infectiology	105	7	6	Surgery	160	9,5	6
Dermatovenerology	80	5	6	Gynecology	100	6	6
Neurology	97	6	6	Clinical pharmacology	30	1,5	3
Elective subject	15	1		Clinical biochemistry	30	1,5	3
				Oncology	45	2	6
	502	30			515	30	

# V YEAR

	IX semester			X semester			
Subjects	Lessons	Credits	Validity exam sessions	Subjects	Lessons	Credits	Validity exam sessions
Surgery	175	10.5	6	Pediatrics	90	5	6
Gynecology and obstetrics	105	6	6	Psychiatry	95	5.5	6
Pediatrics	90	6	6	Otorhinolaryngology	97	6	6
Orthopedics	55	3	6	Ophthalmology	67	4	6
Anesthesiology and reanimation and pain management	40	2	6	Family medicine	30	1.5	6
Emergency medicine	30	1.5	6	Forensic medicine	75	4	6
Physical medicine and	15	1	6	Occupational medicine	45	2	6

ĺ		510	30		529		30
				Social medicine and health economics	30	2	6
	rehabilitation						

# VI YEAR

XI semester		XII semester			
Subjects	Durantion/organization	Lessons	Credits		
Internal medicine clinical practice	8 weeks	320	15		
Surgery clinical practice	8 weeks	320	15		
Gynecology and obstetrics clinical practice	4 weeks	160	7		
Pediatrics clinical practice	3 weeks	120	6		
Public health clinical practice	2 weeks	80	4		
Family medicine clinical practice	1 week	40	2		
Gerontology	1 week	40	2		
Palliative medicine	1 week	40	2		
Seminars* (3 subjects)	1 week Differential diagnosis (solving cases internal+surgery+pediatrics)	60	3		
Clinical microbiology	2 days	15	1		
Rational drug prescription and natural ways of healing	1 week	40	2		
Elective subject		15	1		
		1250	60		

<sup>\*</sup>Seminars are conducted on the mentoring principle with professors and assistants. They are organized as active participation of students in the working process, participation of seminars and/or workshops, public presentations of case reports.

# Conditional criteria I for II Semester

Signature: Anatomy 1	<b>→</b>	Anatomy 2
Signature: Histology and embryology 1	<b>→</b>	Histology and embryology 2
Signature: Cell morphology and physiology	<b></b>	Introduction to human genetics
Signature: Introduction to medicine	<b>-</b>	Health promotion

# II for III semester

Passed exams: Anatomy 1 Anatomy 2 Histology and embryology 1		Anatomy 3 Physiology 1
Passed exams : Medical chemistry	<b>→</b>	Biochemistry 1
Passed exams: Cell morphology and physiology	<b>→</b>	Physiology 1 Introduction to immunology
Signature: Introduction to human genetics	<b>→</b>	Introduction to immunology

# III for IV semester

Signature: Biochemistry 1	<b>→</b>	Biochemistry 2
Signature: Physiology 1	<b>→</b>	Physiology 2 Pathophysiology 1
Passed exams: Cell morphology and physiology  Signature: Introduction to immunology	<b></b>	Microbiology & parasitology 1

# IV for V semester

1 7 101	v semester
Passed exam: Physiology 1 Signature: * Pathophysiology 1	Pathophysiology 2
Passed exam: Physiology 1 Signature : Physiology 2 Pathophysiology 1 ** Microbiology & parasitology 1	Microbiology & parasitology 2
Passed exams: Physiology 1 Anatomy 3 Histology and embryology 2 Signature : Physiology 2 * Pathophysiology 1	Pathology 1
Passed exams: Physiology 1 and Anatomy 3 Signature: Microbiology & parasitology 1 * Pathophysiology 1	Clinical examination 1
Passed exam: Biophysics	Radiology Nuclear medicine

<sup>\*</sup>The student does not have a right to take Pathophysiology 2, Pathology 1 and Clinical examination exams before passing Pathophysiology 1 exam.

# V for VI semester

Passed exams: Biochemistry 1		
Physiology 2		
Signature:		Clinical examination 2
Pathology 1		
Pathophysiology 2		
Clinical examination 1	<b>→</b>	
Passed exams:		
Biochemistry 1		
Physiology 2 <b>Signature</b> :		
Pathology 1		Pathology 2
Pathophysiology 2		
	<b>→</b>	
Passed exams:		
Biochemistry 1		
Physiology 2		D1 1
Signature:		Pharmacology
Pathology 1		
Pathophysiology 2	<b>→</b>	
Passed exams:		
Biochemistry 1		
Physiology 2		m c : 1
Signature:		Transfusiology
Pathology 1		
Pathophysiology 2	<b>→</b>	
Passed exam: Medical statistics and informatics	<b>→</b>	Epidemiology

<sup>\*\*</sup>The student does not have the right to take Microbiology and parasitology 2 exam before passing Microbiology and parasitology 1 exam.

# VI for VII semester

Passed exams:		
Introduction to medicine		
Medical psychology and sociology		
Health promotion		
Medical ethics		
First aid		
Basics in scientific work		
Introduction to human genetics		
Biochemistry 2		
Microbiology and parasitology 2		
Pathophysiology 2		
Pathology 1		For any subject
Pathology 2		Tor any subject
Clinical examination		
Introduction to immunology		
Hygiene		
Radiology		
Nuclear medicine		
Signature:		
*Pharmacology		
Epidemiology		
Transfusiology		
	<b>─</b>	

<sup>\*</sup>The student does not have the right to take Clinical pharmacology exam before passing Pharmacology exam.

1.	Subject	ANATOMY 1			
2.	Code	MED 111			
3.	Study Program	General Medici	ne		
4.	Institution (Unit, Institute, Chair, Department)	Ss Cyril and Faculty, Depart			ersity, Medical
5.	Degree of education (first or second cycle)	Integrated 6-year	ar study		
6.	Study year/semester	First (I) / First (I)	7.Number credits	of	9
8.	Responsible teacher  Prof. Julija Zhivadinovikj Bogdanovska, PhD, MD				
9.	Preconditions	None			
10.	Teaching goals:				
	<ul> <li>Introduction to anatomy as a natural, morphological science and its place among the medical disciplines;</li> </ul>				
	• Introduction to osteology and syndesmology of the extremities, torso and head; • Introduction to the myology, angiology and neurology of extremities.				
11.	Brief content:				

- Bone as an organ, types of bones, its morphological characteristics.
- Osteology and syndesmology of upper and lower extremities.
- Osteology and syndesmology of the torso.
- Osteology and syndesmology of the head.
- Myology, angiology and neurology of upper and lower extremities.

#### **Practical lessons:**

Method of assessment

17.

- Practical exercises on specific bones in the extremities, the torso and the head.
- Skeleton of the thorax, spine, pelvis and head.
- Syndesmology of upper and lower extremities, the spine, torso and head.
- Topographical anatomy of upper and lower extremities.

16.3.

• Regions of the arm and leg and their contents.

#### 12. **Methods of studying:** Interactive teaching during lectures and practical trainings, independent study by using textbooks, visual studying of skeletons with human bones, practical exercises on cadavers and specimens, computer-assisted learning. 13. Total available time: 270 classes 90 classes - theoretical course, practical 14. Organization of the course course, seminars 180 classes - home individual learning 15. Forms of teaching 15.1. Theoretical course 45 classes activities 15.2. Practical course, 45 classes Seminars 16. Other forms of activities Practice 16.1. Individual tasks 16.2.

Individual (home) learning

180 classes

17.1	Tests		min – max
		Continual assessment - 3(oral)	
		Osteology, syndesmology and regions of extremity. Osteology and	the upper
		syndesmology of thorax and spine.	6-10 points
		2. Osteology and syndesmology of the	
		lower extremity.	6-10 points
		3. Osteology and syndesmology of the	
		head	6-10 points

			"					
				examination	est + practical examinations myology, angiology a			
				upper and l extremities 2. Practical ex lower extre 3. Oral exami	ower	12-20 points elements of upper and wledge of the whole		
					n the final exam is given d on the basis of the sun es.			
	17.2	Seminar paper/pr (oral/wri presentar	tten			min – max 1 - 2		
	17.3	Active participa	tion	Theoretical course Practical course Completed textbool	ζ.	min – max 1-2 4 - 6 mandatory		
18.	Grading criteria (points / grade)		up to 59	points	5 (five) F			
			from 60 to 68 points		6 (six) E			
			from 69 to 76 points		7 (seven) D			
			from 77 to 84 points		8 (eight) C			
			-	from 85 to 92	•	9 (nine) B		
				from 93 to 100		10 (ten) A		
19.	_	ement for king the fir	•	The student is required to actively follow all of the planned activities.				
				In order to get a	teria for assessment of signature, the student sh	nould obtain minimum		
				points in both th	eoretical and practical c	ourses, and to present		
			minimum points student has not of	the final exam, the stude in the three continual a obtained the minimum p she will be obligated to	ssessments; If the oints in the continual			
20.	Langua	age of inst	ruction	English				
21.	Method of monitoring the			Attendance of st	udents to classes and in	teractive participation		
	quality of teaching process		in theoretical an	d practical lessons.				
22.	Textbo		ndatory					
		1.		c human anatomy -	Tosovska Lazarova D, Janevska Nakeva N, Papazova M,	Skopje: 2016 Medical Faculty		

	Ado	litional			
	1.	Clinically oriented anatomy.	Moore KL.	Skopje:	2011
				Tabernakul	
	2.	Atlas of human anatomy			
22.2.	3.	Human sectional anatomy.	Ellis H, Logan BM,	Skopje: Ars	2011
			Dixon AK.	Lamina	
				DOO	
	4.	Peripheral nerve	Papazova M,	Skopje:	2009
		systemclinical anatomy.	Zhivadinovikj J.	MARIV-S	

1.	Subject	ANATOMY 2
2.	Code	MED 121
3.	Study Program	General Medicine
4.	Institution (Unit, Institute, Chair, Department)	Ss Cyril and Methodius University, Medical Faculty, Department of Anatomy
5.	Degree of education (first or second cycle)	Integrated 6-year study
6.	Study year/semester	First (I) / 7.Number of 7 Second (II) credits
8.	Responsible teacher	Prof. Julija Zhivadinovikj Bogdanovska, PhD, MD
9.	Preconditions	Signature from Anatomy 1

- 10. Teaching goals:
  - Introduction to the descriptive and topographical anatomy of the thoracic, abdominal and pelvic walls;
  - Introduction to the topography of the thoracic, abdominal and pelvic cavity;
  - Introduction to the morphology, the structure and the syntopic, skeletotopic and holotopic relations of the thoracic, abdominal and pelvic cavity contents.

#### 11. Brief content:

#### **Theoretical course:**

- Thoracic walls and the topographical division of the thoracic cavity.
- Contents of the pleuropulmonary regions, and the anterior and posterior mediastinum.
- Abdominal walls with weak points and topographical division of the abdominal cavity.
- Contents of the superior and inferior floors of the peritoneal cavity and the retroperitoneal space.
- Pelvic walls and division of the pelvic cavity to floors.
- Contents of the superior, subperitoneal and subcutaneous pelvic floor.

#### **Practical course:**

• Practical exercises on cadavers, or more specific:

Regions of the thorax with the organs in the thoracic cavity.

Regions of the abdomen with the organs in the abdominal cavity.

Regions of the pelvis with the organs in the pelvic cavity.

Learning the morphology, structure, syntopic, skeletotopic and holotopic relationships of the organs in the thoracic, abdominal and pelvic cavity by practical exercises on cadavers and fixed specimens.

#### 12. **Methods of studying:**

Interactive teaching during lectures and practical trainings, independent studying by using textbook, practical exercises on the regions of cadavers, practical exercises on individual organs, computer -assisted studying.

	13.	Total available time:	270 classes
	14.	Organization of the course	90 classes - theoretical course, practical course, seminars
L			180 classes - home individual learning

15.	Forms activiti	of teaching es	15.1.	Theoretical course	45 classes
			15.2.	Practical course, Seminars	45 classes
16.	Other	forms of activities	16.1.	Practice	
			16.2.	Individual tasks	
			16.3.	Individual (home) learning	180 classes
17.	Metho	d of assessment			
	17.1	Tests			min – max
			Contin	ual assessment of knowledge -	2 (oral)

			1. Thorax	9 -15 points
			2. Abdome	en 9 -15 points
			Final exam: final test + prac	tical examination +oral
			examination	
			1. Final test: pelvis 9-15 p	
			2. Practical examination: regionabdomen and pelvis	6-10 points
			3. Oral examination: Integrativ	•
			material learnt in Anatomy 2.	18-30 points
			The grade in the final exam is	given according to the
				of the sum of points obtained in all
			of the activities.	1
	17.2	Seminar		min – max
		paper/project		1 - 2
		(oral/written		
	15.0	presentation)		
	17.3	Active	777	min – max
		participation	Theoretical course Practical course	1-2 4 - 6
			Completed textbook	mandatory
18.	Gradin	g criteria	up to 59 points	5 (five) F
10.		s / grade)	from 60 to 68 points	6 (six) E
	(points	, r grade)	from 69 to 76 points	7 (seven) D
			from 77 to 84 points	8 (eight) C
			from 85 to 92 points	9 (nine) B
			from 93 to 100 points	10 (ten) A
19.	Requir	rement for signatu		ctively follow all of the planned
	_	king the final exam	activities.	1
			Conditional criteria for a	ssessment of knowledge:
			In order to get a signature,	the student should obtain minimum
			points in both theoretical a	nd practical courses, and to present
			a seminar paper;	
			In order to take the final ex	am, the student should obtain the
				continual assessments; If the
				e minimum points in the continual
			assessments, he/she will be final exam.	obligated to pass them before the
20.	Lanous	age of instruction	English	
21.		d of monitoring the	•	lasses and interactive participation
21.		of teaching process	in theoretical and practical	
22.	Textbo		F	
	22.1	1		
1				

	1.	Systematic human anatomy - part 2.	Tosovska Lazarova D, Janevska Nakeva N, Papazova M, Matveeva N, Zhivadinovikj J.	Skopje: 2 Medical Faculty	016
	Add	litional			
	1.	Clinically oriented anatomy.	Moore KL.	Skopje:	2011
				Tabernakul	
	2.	Atlas of human anatomy			
22.2.	3.	Human sectional anatomy.	Ellis H, Logan BM,	Skopje: Ars	2011
			Dixon AK.	Lamina	
				DOO	
	4.	Peripheral nerve	Papazova M,	Skopje:	2009
		systemclinical anatomy.	Zhivadinovikj J.	MARIV-S	

1.	Subject	ANATOMY 3
2.	Code	MED 211
3.	Study Program	General Medicine
4.	Institution (Unit, Institute, Chair, Department)	Ss Cyril and Methodius University, Medical Faculty, Department of Anatomy
5.	Degree of education (first or second cycle)	Integrated 6-year study
6.	Study year/semester	Second (II) / 7.Number of 6 Third (III) credits 6
8.	Responsible teacher	Prof. Julija Zhivadinovikj Bogdanovska, PhD, MD
9.	Preconditions	Passed exam of Anatomy 2

## 10. Teaching goals:

- To become acquainted with the morphology and the structural elements of the head and neck:
- To become acquainted with the topography of the head and neck;
- To become acquainted with the muscles, fasciae, blood and lymph vessels, nerves and the organs of the head and neck;
- To become acquainted with the morphology and structure of the sense of hearing, sense of sight and sense of balance;
- To become acquainted with the morphology, structure and the significance of the central nervous system components (CNS).

#### 11. Brief content:

#### **Theoretical course:**

- Myology, neurology and angiology of the head and neck.
- Organs of the head and neck.
- Components of CNS
- CNS paths
- Vascularization of CNS
- CNS envelopments
- Cerebrospinal fluid
- Sences of sight, hearing and balance

### **Practical course:**

Topographical regions of the head and neck

# 12. **Methods of studying:**

Interactive teaching during lectures and practical trainings, independent study by using textbooks, visual studying, practical exercises on cadavers and specimens, computer-assisted learning.

	rearming.	
13.	Total available time:	270 classes
14.	Organization of the course	90 classes - theoretical course, practical course, seminars 180 classes - home individual learning

15.		of teaching	15.1.	Theoretical cours	e	45 classes	
	activit	ies	15.2.	Practical course, Seminars		45 classes	
16	Othon	forms of activities	16.1.	Practice			
16.	Other	forms of activities					
			16.2.	Individual tasks	\ 1 ·	100 1	
			16.3.	Individual (home	) learning	180 classes	}
17.		d of assessment					
	17.1	Tests	3	nal assessment of k  Neurology of the Sences of sight, h  kam: final test + pr  ation	head and ne nearing and b	eck 12-20 palance 6 - 10	
				Final test: myology nses and the central			thehead and 12-20 points
			2.	Practical examination	on: region of	f the head and	•
				Oral examination: I learnt in Anatomy		nowledge of	the whole 18-30 points
			grading	de in the comprehe table, and on the be activities.			
	17.2	Seminar paper/project (oral/written presentation)					min – max 1 - 2
	17.3	Active					min – max
	17.3	participation	Theoret	ical course			1-2
		participation	Practica				4 - 6
				ted textbook			mandatory
18.	Gradir	ng criteria	Compre	up to 59 points			5 (five) F
10.		s / grade)	fro	om 60 to 68 points			6 (six) E
	4	<i>8</i> ,		om 69 to 76 points			7 (seven) D
				om 77 to 84 points			8 (eight) C
				om 85 to 92 points			9 (nine) B
				n 93 to 100 points			10 (ten) A
19.		rement for signature king the final exam	The active Con In or	student is required trities.  ditional criteria for der to get a signatur	r assessmen	t of knowled	e planned  ge: ain minimum
			-	ts in both theoretica	I and practic	al courses, a	nd to present
				ninar paper;		_	
				der to take the final			
				mum points in the t			
				ent has not obtained		_	
				ssments, he/she will exam.	de obligateo	i to pass then	i before the
20	T	<b>E</b> :					
20.		age of instruction	Engl		1.	1 t	
21.		d of monitoring the		ndance of students t		ı ınteractıve j	participation
22.		of teaching process	in th	eoretical and practic	cai iessons.		
22.	Textbo						
	22.	1. Mandatory					

		1.	Systematic human anat part 3.	omy -	D, Jane N, F Matvee	ka Lazarova vyska Nakeva Papazova M, vya N, inovikj J.	Skopje: Medical Faculty	2016	
			ditional		Т		T		
		1.	Clinically oriented anal		Moore	KL.	Skopje: Tabernak	ul 20	11
		2.	Atlas of human anatomy						
	22.2	3.	Human sectional anato	my.	Ellis H Dixon	, Logan BM, AK.	Skopje: A Lamina DOO	ars 20	11
	22.2.	4.	Peripheral nerve systemclinical anatomy	<b>7.</b>	Papazo Lazaro Zhivad		Skopje: MARIV-		009
		5. Clinical anatomy of the organ of hearing and balance.			Papazova M, Zhivadinovikj J, Netkovski J.		Skopje: UKIM, Medical Faculty	20	)14
		6.	Clinical anatomy of the	e nose.	Papazova M, Zhivadinovikj J, Netkovski J.		Skopje: UKIM, Medical Faculty	203	16
		7.	Vascularization of the b	orain.	Papazova M, Lazarova D, Zhivadinovikj J.		Skopje: UKIM, Medical Faculty	203	10
1.	Subject			HIS	STOLO	GY AND EM		)GY (1)	)
2.	Code			MED				- ( - ( - )	
3.	Study pro	gran	n	Undergraduate general medicine program					
4.		ı (Ur	nit, Institute, Chair,	Institute of Medical Histology and Embryology UKIM – Faculty of medicine					, <b>y</b>
5.	Education second cyc	al	degree (first or		rated cyc				
6.			r / semester	First	/ first	7. Број н креди	иа ЕКТС ти	4	
8.	Professor-	Lect	turer in charge	Prof.	Liljana	Milenkova M			
9.	Preconditions:			/					
10.	<ul><li>To</li><li>To</li><li>To</li><li>To</li></ul>	get a be al be al get s	s and study program acquainted with the corble to define and classible to stress out the function identify the tissal components and to components and to components.	ncept of the actional sues or	f human tissues. l abilitie n microse	prenatal developments of each compactoric slides, to	ponent of t		Э.

# 11. Content of the study program Theoretical and laboratory practice classes:

- The structure of male and female gamete; fertilization, implantation of the conceptus.
- Preembryonic period, (embryogenesis), embryonic period (organogenesis), fetal period.
- Structure and function of placenta and of embryonic sac.
- Disturbances of the prenatal development and origin of the congenital anomalies.
- Microscopic slides, microscope, tissues.
- Structural characteristics and types of epithelial, connective, cartilaginous, bone, muscle and nerve tissues.
- Histological characteristics of the: bones and junctions, heart, blood and lymphatic vessels, lympho-epithelial and lympho-reticular organs.
- Embryonic development and origin of the congenital anomalies of cardiovascular and skeletal system.

# 12. **Learning methods**

- Through visual presentation during accentuated concept lectures, studygoal oriented learning, and interactive teaching.
- Through power point, video presentations and other aids during laboratory practice classes.
- Through video-presentation and individual examination of microscopic slides.
- Through student presentations and open discussions during seminars.
- Through learning from recommended literature and selected files available on the web site of the Institute of histology and embryology.

	67	
13.	Total number of hours	150
14.	Distribution of the available time	

15.	Forms of educational activities		15.1	Lectures - theoretical course	30		
			15.2	Laboratory practice classes:	30		
16.	Other	forms	16.1	Projects assignments			
			16.2	Individual tasks	6		
			16.3	Home learning	84		
	Asses	ment of knowlwdg	ge				
	17.1	Continuous	1.	Written: Prenatal devel	opment, placenta, causes		
	Assessment:			nsequences of the develo	opmental		
				bances	12-20		
			<b>2.</b> 20	Written: Tissue structu	re 12-		
			<b>Laboratory practice:</b> Microscopic slides from different tissues 9 -15				
		Final exam	_	mphoid organs, skeletal and thistology and embryo	system and cardio-vascular logy)		
			1. Laboratory practice: Microscopic slides of lymphoid organs, bone, heart, blood vessels and lymphatic vessels. 7 - 12				
			2.	<b>Oral</b> : Lymphoid organs ovascular system (histolo	•		

	17.2	Seminars / projects (oral or written presentation)		min - max points
	17.3	Active		points
		participation	Theoretical course	1-3
			Practical course	4-7
18.		vledge	Up to 59	5 (five) F
		sment criteria	points	
	(point	s/grade)	from 60 to 68	6 (six) E
			from 69 to 76	7 (seven) D
			from 77 to 84	8 (eight) C
			from 85 to 92	9 (nine) B
			from 93 to 100	10 (ten) A
19.	signa	ria for obtaining ture and taking nal exam	including continuous  Conditional criteria  Students which have assessment, apply for a In case the student has on each continual assecomplete final exam.  Complete final examination of both with continuous assess examination.  The grade for the entitable of grades and bases.	pation in all the teaching activities assessments.  for assesment of knowledge: successfully pass the continuous final exam. s not achieved minimum points (60%) essment, he/she applies to take the

20.	Language		English					
21.	Methods of evaluation		Anon	imous student's	s evaluati	on of the subject, tea	chers and	
	of quality of education			collab	orators involve	ed in the e	educational activities	
22.	Literature / textbooks							
		Mand	latory literat	ure				
			Author	r	Title		Editor	Year
		1	The stuff of	of the	Study quid	e for	On the web site of	2017
			Department	of	Histolog	y &	the Medical	
			his-tology	and	embryolog	gy (1)	faculty of Skopje	
		2	embryo-log		0 4 1 1		34 '	2000
	22.1	2	Milenkova	L,	1	logija na	Mariv	2009
			Kostovska I	ν.	covekot ( <b>General hur</b>	non		
					embryology)			
	3 Kostovska Milenkova I		N,	• 00 /	,	Mariv	2009	
				Gradba na	tkivata			
					(Histology-	tissue		
					structure);			

		4	Kostovska N,		toloska gradba i	Medicinski	2013
			Milenkova L.	emb	orionalen razvitok	fakultet, Skopje	
				na c	organskite sistemi		
				(Hi	stology and		
				eml	oryonicdevelopme		
				nt	of organ		
				syst	tems)		
				•	,		
		5	Mitevska E.	Prir	acnik za prakticna	Medicinski	2012
		3	incevena i.		tava po	fakultet, Skopje	2012
					ologija i	такинен, экорје	
					oriologija-1		
				•	anual for		
					ora-tory		
				_	ctice for		
					cology and		
		-			oryology-1)	~	
		6	The stuff of the		ected files (Power	Continously	
			Department of		nt presentations)	revised	
			his-tology and		ilable on the web		
			embryo-logy	site	of the Med. Fak.		
		Aditio	onal literature				
			Author		Title	Editor	Year
		1	Michael H. Ross,	His	tology, A text	original version	2010
			Wojciech Pawlina		atlas: (original	5th ed.	translatio
			3		sion and		n in
				tran	slation in		macedon
				mac	cedonian)		ian
	22.2	2	J.K.Junqueira, H.		sic histology. Text	original version	2009
		_	Carneiro		l atlas;	11th ed.	translatio
			Curnons		a acids,	110100.	n in
							macedon
							ian
		3	Keith L. Moore,	The	davaloning	original	2010
		3	T.V.N. Persaud		nan.	version	translatio
			1. V.IV. I CISAUG	IIui	nan.	8th ed.	n in
						oen ea.	11 111
					inically aris4-1		macadan
					inically oriented		macedon
					nbryology:		ian
				(01	riginal		
				_	version and		
					nslation in mace-		
					nian)		
					ww.biolucida.co		
				<u>m</u> \	Medical		
4	g	4		ed	ucation edition	AID ELEBRICE C	OT7 (2)
1.	Subje	ct				AND EMBRYOLO	GY (2)
2.	Code				MED 122		
3.		progra				neral medicine progr	am
4.			Unit, Institute, Chai	ir,	Institute of Medica	<b>.</b>	
	_	rtment)	1			M – Faculty of medi	cine
5.		ational	degree (first	or	Интегриран цикл	yc	
	secon	d cycle)					
	-				-		

6.	Academic year / semester	First / second	7.	Number of ECTS credits	6
8.	Professor-Lecturer in charge	Prof. Liljana	Milen	kova M.D. PhD	
9.	Prerequisites	None			
1.0					

# 10. Teaching goals and study program (competencies):

- 1. Acquiring skills of viewing histology microscopic slides and precise identification of structural components of tissues and organs 2. Acquiring ability of comprehension of:
- specific combination of tissues in each organ;
- crucial components of organs;
- specific structural properties determining basic organ function;
- role of additional (supporting) structural and functional components.
- 3. Acquiring ability to present comprehension of origin and organ development;
- 4. Acquiring basic ability to make causal-consequential connection between potential disruption of organ development and type of resulting congenital anomaly.

# 11. **Brief content of study program**

# Theoretical and laboratory practice classes:

Microscopic structure, embryonic development, concept of origin of congenital malformations of organ systems

- gastro-intestinal,
- urinary,
- genital,
- respiratory,
- endocrine,
- central nervous system,
- skir
- sensory organs.

# 12. **Learning methods**

- Through visual presentation during accentuated concept lectures, studygoal oriented learning, and interactive teaching.
- Through power point, video presentations and other aids during laboratory practice classes.
- Through individual examination of microscopic slides.
- Through student presentations and open discussions during seminars.

	- Through learning from	- Through learning from recommended literature and selected files available on the						
	web site of the Institute of							
13.	<b>Total number of hours</b>			180				
14.	Distribution of the avai	ne						
15.	Forms of educational	15.1	Theory	lectures:	30			
	activities	15.2	Laboratory practice		45			
1.0	O/I 6	161	classes:	• ,				
16.	Other forms	16.1	Project a	assignments				
		16.2	Individu	al tasks	18			
		16.3	Home studing 7		78			
	Assesment of knowlwdge points							

1	17 1	Q + '				
	17.1	Continuous				
		Assessment:		1. Gast	rointestinal system, Written:	
				8,4-14	,	
				Microscopic	eslides	
				2,4 - 4		
					ary and male & female genital	
				systems, Wr	ritten:	
				13,2-22		
				Microscopic	e slides	
				2,4 - 4		
		Final exam		_	ntory system, endocrine	
				system,	46	
				C.N.S., eye,		
				1.Practical- 2.Oral:	Microscopic slides 4,8 - 8	
				2. <b>Ora</b> i: 38	22.0	
				36	22,8-	
	17.2	Seminars / proje	ects (oral		points min - max	
	17.2	or written presen			points min max	
		<b>F</b>	,			
	17.3	Active participati	ion			
				points	1.2	
				Theoretical or		
10	Vmov	uladaa aagaaamant		Practical cou	T	
18.	criter	vledge assessment	n/	Up to 59 oints	5 (five) F	
	CITTE	ıa	•	com 60 to 68	6 (civ.) E	
	(poin	ts/grade)			6 (six) E	
	Pom	<b>3</b> )		com 69 to 76 com 77 to 84	7 (seven) D	
				rom 85 to 92	8 (eight) C	
				om 93 to 100	9 (nine) B	
19.	Crite	ria far abtaining a			10 (ten) A for assesment of knowledge:	
17.		ria for obtaining a ture and taking		onai criteria i for signatui	_	
		nal exam		_	pation in all the teaching	
	acti				ontinuous assesments. Criteria	
				sment on fin		
					succesfully pass the continuous	
				nt, apply for i	* <del>*</del>	
					s not achieved minimum points	
			(60%) o	n each contin	ual assessment, he/she applies to	
			take the	complete fina	l exam.	

		take the complete final exam.
		Complete final exam: The final exam is a
		combination of both written examinations (segments
		of the continuous assessments with less of 60%) and
		final examination.
		The grade for the entire exam is obtained according to the
		table of grades and based on the sum of the points gained in
		all the activities including the continual assessment.
		- C
20.	Language	English

21.	of the educa	quality tion			imous student's evaluation in the collaborators involved in the collaborators involved in the collaborators.	<b>J</b>				
22.	Mand		iterature							
		Basic			m: 1	D.11.	***			
		1	Author		Title	Editor	Year			
		1	The stuff of Department his-tology embryo-log	of and	Study quide for Histology & embryology (2)	On the web site of the Medical faculty of Skopje	2017			
	22.1	2	Kostovska Milenkova l	N,	Histoloska gradba i embrionalen razvitok na organskite sistemi (Histology and embryonicdevelopme nt of organ systems)	Medicinski fakultet, Skopje	2013			
		3	The stuff of Department his-tology embryo-log	of and y	Selected files (Power Point presentations) available on the web site of the Med. Fak.	Contiuously revised				
		Aditio	onal literatui		T:41.	E 124	<b>V</b>			
		1	Author Michael H.		Title  Histology, A text	Editor original version	Year 2010			
		1	Wojciech Pa	,	<b>Histology,</b> A text and atlas: (original version and translation in	5th ed.	translat ion in macedo			
					macedonian)		nian			
	22.2	2	J.K.Junquei Carneiro	ra, H.	Basic histology. Text and atlas;	original version 11th ed.	2009 translat ion in macedo nian			
		3	Keith L. M. T.V.N. Pers	,	The developing human. Clinically oriented embryology (original version and translation in	original version 8th ed.	2010 translat ion i n macedo			
		4			mace-donian)  www.biolucida.co  m\ Medical  education edition		nian			

1.	Subject	BASIC IMMUNOLOGY
2.	Code	MED 214
3.	Study Program	General medicine
4.	Organizing Institution ( Unit,	UKIM-Faculty of Medicine Cathedra
	Institute, Chair, Department)	of Immunology
5.	<b>Educational degree (first or</b>	Integrated cycle
	second cycle)	

6.	Study	year /semester		Se d	cond/Thir	7.	Number of credits	3
8.	Respo	onsible teacher		Pro	of Dr. Kocl	ho Di	mitrovski	
9.	Preco	onditions:		Pa cel		Morp	hology and Phisio	logy of
10.	Teach	Instroducing studer Instroducing studer Instroducing studer Training the studen immunodiagnostic   Connecting basic im	nts in bas nts in imi ts for pe procedu	sics of Imr munologi rformimg res	munology cal disorders and interpr	s retatin		
11.	Conte	nts of the study prog		67	2462 111411 01			
		etical course:						
	•	T and B cell immune	e respon	se				
	•	Immune effector m	echanisr	m				
	•	Immunological diso	rders					
	Practio	cal course:						
	•	Immunological diag	nostics					
	•	Analyses of immuno	ological	cases of p	atients histo	ory		
12.		ods of studying:						
13.		no. of hours:			45 hours	S		
14.	Distri	bution of the avail	1	- -				
15.	· · -	of educational	15.1		s-theoretic	al	24 hours	
	activi	ty	15.0	course	1 /1 1		21.1	
			15.2	clinical	als (laborate), rs, team	ory,	21 hours	
16.	Other	types of	16.1		assignmen	ts	hours	
10.	activi		16.2		ual tasks	CD .	hours	
	detivi		16.3		tudying		hours	
17.	Asses	sment of knowledg		Tionic s	tudying		nours	
	points	_	•					
	17.1	Tests		3 Cc	ontinuous to 12-20. 6-10 Comple		total	- 30 max. points
		Final exam		Subj	ect:	•		
					tical exam exam		25 min. 17 p 25. pe	
	17.2	Seminar work/pro (presentation: writ oral)	-	Sem	inar works		1 min 2	2max. points
	17.3	Active participation	on		oretical cou		min1 points 1-3 points 4-7	3
1 Q	TZ	ledge assessment		up to 50				(fivo) I

5 (five) F

up to 59 points

18.

Knowledge assessment

1	criteri	a:		-	60 to 68 points			6 (six) E
		u. ts/grade	<i>a</i>		59 to 76 points		7	(seven) D
	(poin	ts/grade	_		77 to 84 points			(seven) D (eight) C
					35 to 92 points			9 (nine) B
					8 to 100 points			$\frac{9 \text{ (line) } \text{ B}}{10 \text{ (ten) } \text{ A}}$
19.	Critar	ia for al	otaining a		•	for occ	sessment of knowl	
19.			taking the	Condi	monai criteria	ior ass	sessificiti of Kilowi	euge:
	final e		taking the					
20.			the course	Englis	h			
21.	0 0					evalua	ation of the subject	teachers
21.			_			n the educational a		
22.	Literature		and co	madorators nive	orved ii	i the educational a	Ctivities	
22.	Mandatory textbooks			ks				
		iviana	Autho		Title		Publisher	Year
		1	Prof K.	1	Lectures		1 donsher	current
		1	Dimitrovsk	i	Lectures			Current
		2	Doc D. Tra		Lectures			Current
		3	Kuby	jko v	Immunology 6	5 <sup>th</sup> ed	New York : W.H.	2007
	22.1	3	Kuby		Immunology	Ca	Freeman	2007
		4	Immunolog	у	Spiroski at al.			2005
			practicum					
		5	Analyses	of	Spiroski at al.			2007
			immunolog	ical				
			cases					
		6						
		7						
	22.2	Additi	ional literatur	re				
	22.2		Autho	r	Title		Publisher	Year
1.	Subjec	t			RATIONAL	DRU		NG ANI
					NATURAL W	'AYS O	F HEALING	
2.	Code				MED-615			
3.		Program .·	l		General Medici			L. 1 E. 1.
4.	Institu		Chair Danar	tmont)	•		ius University, Med	ncal Faculty
5.	Degree		, Chair, Depar education	unent)	Department of Integrated 6-ye		•••	
٥.	_	r second			integrated 0-ye	ai study	,	
6.		year/sen	•		Sixth (XI)/ (XI	I)	7.Number of cred	its 2
8.	Respon	nsible te	acher		Prof. Dimche Z	Zafirov,	PhD, MD	
9.	Precor	ditions			Fullfilled condi	ition for	enrollment in the V	II semester
10.		ng goals	):			101		
	• Gai • Mal • Gai	ning kno king asse	wledge about essment and us	e of the	•	ing a ch	rmacotherapy; oise for a "personal' g, especially about th	
11.	Brief o	ontent:						

12.	• Bas • Rat • Nat • Her  Practi • Eva "pe  Metho Interact semina	cal lessons: cal l	selected nd safety se-reports lected dis	associated with the use of the sociated with the use of the socialed with the use of the sociated with the use of the use of the sociated with the use of the us	naking a choise for a
13.	Total a	available time:		60 classes	
14.	Organ	ization of the course		excersises, semina	etical course, practical ars individual learning
15.	Forms	of teaching activities	15.1.	Theoretical course	30 classes
16.	Othor	forms of activities	15.2.	Practical course, Seminars Practice	10 classes
10.	Other forms of activities		16.1. 16.2.	Individual tasks	
			16.3.	Individual (home)	) 20 classes
17.	Matha	d of assessment		learning	
17.	17.1	d of assessment			min – max
		Tests	*1 wri	tten test with case-reported adjustement (team work)  Oral examination	points 12- 20 included for individual min – points
	17.2	Final exam:  Seminar paper/project (oral/written presentation)  Active participation	Practic *Prese 30-509 51-709 71-100 **Prac Presen Interac 6 point	etical course* cal course** nce at the theoretical course 6 1 point 6 2 points	ge: min.
18.		ng criteria		up to 59 points	5 (five) F
	(points	s / grade)	from	60 to 68 points	6 (six) E

				from 69	to 76 p	points			7 (se	even) D
				from 77	7 to 84	points			8	(eight) C
				from 85		_				(nine) B
				from 93 to						0 (ten) A
19.	Requiremen	nt for	signature and				actively follo	w all of		. ,
	taking the f			activities.						
				Condition	al cri	teria for	assessment of	f knowl	edge:	
				In order to	get a	signature	e, the student s	hould o	btain n	ninimum
				points in b	oth th	eoretical	and practical	courses	, and to	present
				a seminar	paper.					
				In order to	o take	the final	l exam, the stu	ident sl	nould o	btain the
				minimum	points	of the co	ontinual assess	ment.		
							btained the n			
							ne/she will be	obliga	ited to	pass it
				before the	final	exam.				
20.	Language o	f insti	ruction	English						
21.			oring the quality				•	of the s	ubject,	as well
22	of teaching	proce	SS	of the teac	hers t	hat partic	npate.			
22.	Textbooks	Mor	dotomy							
		1.	ndatory Rang HP, Dale	MM at al		Dana and	1 Dolo's	Elsevie	nr.	2013
		1.	Rang nP, Date	MIM et al.		Rang and Pharmaco		Elsevie	er e	2013
	22.1.	2.	Schulz V, Hans	sel R, Tyler	·VE	Rational	phytotherapy	Spinge		2001
								Verlag	,	
								Berlin	_	
		Add	litional					Heidel	berg	
		1.	Capaso F, Gagi				rapy, a quick	Spring	er	2003
			Grandolini G, I	zzo A.			to herbal			
		2	Emanastia I Vit	orio D		medicine		Madia	malra	2007
	22.2.	2.	Francetic I, Vit	ezic D.		Basics of pharmaco		Medici naklad		2007
						рпагшасс	ology	Zagreb	-	
		3.	Zafirovska K e	t al.		Guideline	es for	Minist		2012
						impleme		Health		
						evidence		Maced	onia	
						medicine				
1.	Subject						CHEMISTRY	7		
2.	Code					D 123				
3.	Study Prog					eral Med		** .	•.	37 22 1
4.	Institution		Chair Damantur	nt)			nd Methodius		ersity,	Medical
5.	Degree of		Chair, Departme	ant)			artment of Ana	uomy		
<i>J</i> .	or second		· ·		mie	514100 0-	year study			
6.	Study year	•			First	t (I)	/ Number	of		7
	January y July		-			ond (II)	credits			
8.	Responsib		cher				rija Krstevska,	PhD		
9.	Precondition				Non	e				
10.	Teachin				. –					
			ence of Matter a		al Bor	ids in Mo	oleculs			
			ns and Electroly		00.04					
			and Kintetics of							
			nd Bases, Redox re and Properties							
	30	uctul	c and i roperties	or organic	Comp	Junus				

Biologicaly important Organic compounds (Carbohydrates, Proteins, Lipids, Nucleic acids)

#### 11. Brief content:

#### **Theoretical course:**

- Structure of atoms and molecules, Ionic, Covalent bonds, Intermolecular forces
- Basic thermochemic lows, Energy of chemical reactions, Chemical kinetics, Rates of chemical reactions, Chemical equlibrium
- Solutions, Quantitative Composition of Compounds, Colligative properties, Weak and Strong electrolytes (dissociation)
- Oxido-reduction (Redox reactions), Theory of acids and bases, pH, Buffers, Equilibrium in water solutions
- · Hemistry of pollution, pollution of natural water and air
- Chemistry of carbon atom, Alkanes, Alkenes, Alkynes, Aromatic compounds and their derivates, Halides, Alcohols, Ethers, Ketones, Aldehydes, Carboxylic acids, Nitrogen and Sulfur containing compounds
- Structures and functions of carbohydrates, proteins, lipids, nucleic acids.
- Chemistry of pollution, pollution of air, natural waters, sea water, purification of contaminated water before returning to the natural environment, getting clean water.

#### **Practical lessons:**

- Preparation and examination of colligative properties of solutions, Volumetric analysis in chemistry, Calculation of solution concentration.
- Calculation from chemical equations and formula
- Nomenclature of more important organic compounds in medicine, reactions of carbohydrates, protein and lipids.

# 12. **Methods of learning:**

Interactive teaching (theoretic), working in small groups, laboratory exercises (practices), seminar work and another forms of anticipated criteria of CTS

13.	Total available time:	Total available time:				
14.	Organization of the course			39 classes - theoretical course,		
				41 practical course,	, seminars	
				180 classes - home	individual learning	
15.	Forms of teaching	15.1.	Theoretic	cal course	39 classes	
	activities	vities				
		15.2.	Practical	course,	41 classes	
			Seminars	S		
16.	Other forms of activities	16.1.	Practice			
		16.2.	Individua	al tasks		
		16.3.	Individua	al (home) learning	120 classes	
17	Method of assessment					

17.1	Tests	Two partial tests (written)	min – max		
		1. Partial test 1 - written	12 – 20 point		
		<ul> <li>Basic structure of atom, Periodic</li> <li>Types of chemical bonds, Water, properties of solution</li> <li>Nonelectrolyte and Electrolyte Solution</li> <li>Acids and Bases, Solubility od salution</li> <li>pH, Buffers, Henderson-Hasselba</li> </ul>	Water, Solutions, Colligative olyte Solutions ty od salts		
		2. Partial test 2 - written	9 –15points		
		Structure, isomerism, reactivity a organic compounds	acture, isomerism, reactivity and clasification of anic compounds		
		Thermodynamic, First and Secon	d Low of		
		thermodynamic	a Low of		
		<ul><li>Free Gibbs energy</li><li>Chemical Kinetic and factors of it</li></ul>	nfluence		

			thermodynamic  Free Gibbs energy  Chemical Kinetic and factors  Chemical equilibrium and factors  Energy of activation, active co  Catalyse, catalysts, biological  Oxidation-reduction, Srandard  3. Practical exam – written	tors of influence omplex catalyst
			4. Final exam oral examination	18– 30 points
			<ul> <li>a) Organic chemistry, chemistry</li> <li>Hydrocarbons (Alkanes, Alke</li> <li>Cycloalkanes</li> <li>Aromatic Hydrocarbons</li> <li>Heterocyclic Hydrocarbons</li> <li>Alcohols, Phenols, Ethers</li> <li>Ketones, Aldehydes, Carboxy</li> <li>Nitrogen and Sulfur containin</li> </ul>	enes, Alkynes) and polyens
			amides, tiols)  • Structures and functions of, pr	
	17.2	Seminar paper/project (oral/written presentation)	amides, tiols)	roteins, lipids, nucleic acid
	17.2	paper/project	amides, tiols)  • Structures and functions of, pr	
18.	17.3	paper/project (oral/written presentation) Active	amides, tiols) • Structures and functions of, proceedings of the structures and functions of the structures are structured as the structures are structured as the structure and structures are structured as the structure and structures are structured as the structure and structure are structured as the structure are structured as the structure and structure are structured as the structure are structure	min – max 1-3

1			
		from 85 to 92 points	9 (nine) B
		from 93 to 100 points	10 (ten) A
19.	Requirement for signature and taking the final exam	The student is required activities.	to actively follow all of the planned
		To get signature in indeminimum 10 points of pattendance), 3 points of theoretical attendance, the Practical exam start in a To approach to the final minimum 60% knowled exam.	•
20.	Language of instruction	English	
21.	Method of monitoring the quality of teaching process		to classes and interactive participation cal lessons.

22.	Textbooks						
		Mai	ndatory				
		1.	General and Organic Chemistry for medical students	Krstevska Marija, Alabakovska Sonja, Efremova Aaron Snezana, Labudovic Danica, Cekovska Svetlana	Skopje: Medical Faculty	2011	
	22.1.	2.	Biochemistry	Dzhekova-Stojkova Sloboda, Korneti Petraki, Todorova Bojana, Trajkovska Snezana. 2 <sup>nd</sup> Ed	Skopje: Medical Faculty	2011	
		3.	Script of Medical Chemistry for medical students	Krstevska Marija, Alabakovska Sonja, Efremova Aaron Snezana, Labudovic Danica, Cekovska Svetlana, DzhekovaStojkova Sloboda, Bosilkova Gordana	Skopje: Medical Faculty	2011	
		Ado	litional				
		1.	General, Organic and Biochemistry	Katherine J Denniston, Joseph J Topping, and Robert L Caret	6 <sup>th</sup> Ed.	2011	
	22.2.	2.	Selected parts of chemistry for the students of Medical School	Zorana Vujovic	Medical Faculty, Belgrade, Serbia	2006	
		3.	Organic chemistry	John McMurry	Skopje	2009	
		4.					
1.	Subject:		INFECTOLOGY				
2.	Code		MED-412				
3.	Study Pro	gran	: General Medicine				
4	Institution	_	Co Comit and Mathedina University Medical Equator Department				

1.	Subject:	INFECTOLOGY
2.	Code	MED-412
3.	<b>Study Program:</b>	General Medicine
4.	Institution (Unit, Institute, Chair, Department)	Ss Cyril and Methodius University, Medical Faculty, Department of Infectology

5.	Degree of education (first and second cycles)	Integrated 6-year stu	ıdy					
6.	Study	Fourth (IV)/	7. Number of ECTS	7				
	year/semester	SeventhVII	credits					
8.	Responsible	Chair of the departm	Chair of the department –prof. d-r Irena Kondova Topuzovska					
	teacher	* the classes are	carried out by all the pro-	ofessors at the				
		Department of Infect	tology					
9.	Preconditions	Criteria meet for enr	collment of the seventh semest	ter				
10.	Goals of the study	program (competen	ces)					
	• The students w	ill be able to learn and u	se the learned knowledge for rat	tional diagnosis,				
	contemporary t	reatment and prevention	of infectious diseases.					
		ill learn to make a rational clinical judgment for recognizing infectious						
	diseases in diffe	erent, mostly expected s	ituations and prescribe a proper	treatment.				
11.	Brief content of the	e study program:						

# **Theoretical course:**

- General Infectology: definition of the term infection and anti-infective immunity, introduction to the pathogenesis of infectious diseases, principles of diagnosis and treatment, anti-infective therapy (antibiotic therapy, antiviral therapy, anti-parasitic therapy, antifungal medications, principles of immune prophylaxis)
- Special Infectology: introduction of basic syndromes with infectious etiology, introduction of the specific bacterial, viral, parasitic, and fungal infections and prion infections, basic knowledge of infections in special hosts, introduction to the importance of recognizing, treatment and prevention of nosocomial infections

# **Practical course**

	Mastering the clinical skills and usage of the acquired theoretical knowledge							
12.	Methods of studying	:						
	Interactive lectures, se	eminars, p	practical trainings					
13.	Total available	210 ho	urs					
	teaching hours							
14.	Organization of the	105 ho	urs- lectures and practical a	ctivities				
	course	105 ho	urs- home individual learni	ng				
	Forms of teaching	15.1	Theoretical course	45 hours				
15.	activities	15.2	Practical course, Seminars	60 hours				
			Practice					
	0.1 6 6	16.1						
16.	Other forms of	16.2	Individual tasks					
	activities	16.3	Individual (home) learning	105 hours				
17.	Method of assessment			Scoring system				
	17.1	Tests		min-max				
			Continual assessment*	points $12-20$				
			*Continual assessment of	of knowledge (colloquia) - 1				
			written test	• •				
			General Infectology					
			(for mark 10=19-20 points; for mark 9=17-18 p for mark 8=15-16					
	points; for mark 7=13-14 points; for mark 6=12 points							

Final exam:	Final exam: final test + practical examination +oral examination
	min-max
	1. Final test * points 9 - 15
	2. Practical examination** points 9 - 15
	3. Oral examination*** points 24 – 40
	*Final test – to assess students' knowledge in infectology- special Infectology (for mark 10=14,515 points; for mark 9=13-14 points; for mark 8=11,5-12,5 points; for mark 7=10-11 points; for mark 6=99,5 points)  ** Practical examination (according to a catalogue of skills): examination of the patients, diagnosis, differential diagnosis, therapy (for mark 10=14,5-15 points; for mark 9=13-14 points; for mark 8=11,5-12,5 points; for mark 7=10-11 points; for mark 6=99,5 points)  *** Oral examination (integrated)- 4 questions in which the integrated knowledge of the student is

17.2	Seminar paper/project (oral/written presentation)  Active participation	checked on matters of understanding to infectious diseases as a whole as well medical routine in infectious diseases (for mark 10=38-40 points); for mark points); for mark 8=32-34 points); for mark 7=28-31 points); for points))  Students are obliged to score the predict of the projected points for each section so that the points can be transferred for exam; otherwise they will fail the test.  Seminar work points  Min-number of the projected points in the point in the poi	as the practical 9=35-37 mark 6=24-27 cted minimum n of the exam r the final Min-max max Theoretic
		colloquia 0.3 points	
18.	Assessment of knowledge (points/scores)	Up to 59 points 60 to 68 points 69 to 76 points 77 to 84 points 85 to 92 points 93 to 100 points	5 (five) F 6 (six) E 7 (seven) D 8 (eight) C 9 (nine) B 10 (ten) A

19.	Requirement for signature and taking the final exam	Obligatory criteria: In order to get a professor's signature the students has to attend theoretic and practical studies, as well as seminars and to gain minimum points.  In order to take the final exam the student has to pass the projected continuous assessments (colloquium in general infectology). During the exams the students has to pass the previously failed Continuous assessments (colloquium in general infectology) and then continue to the final exam.  The grade/score for the entire exam is obtained according the table of grades and based on the sum of the points gained in all the activities, Continuous assessments and final exam.
20.	Language of instruction	English
21.	Method of monitoring the quality of teaching process	Anonymous student evaluation about the subject of study as well as evaluation of the professors and assistant-professors enrolled in the subject studies.
22.	Literature	

	Obligator	y literat	ure						
		No.	Author		Title		Publisher		Year
		1.	Jonathan		Infectology		Tabernac	ul	2012
			Cohen, William J.		Volume 1 a	nd			
			Powderly Steven		Volume 2				
	22.1	2.	Dimitriev Dimitar,		Infectious		Universit	-	2012
	22.1		Ivanovski Ljubom		Diseases		"St Cyril		
			Milenkovic Zvonko				Methodiu	ıs"	
			Grunevska Violeta,	,			Faculty C		
			Topuzovska Irena,				Medicine	,	
			Stojkovska Snezana	, —			Skopje		
1.	Subject				TERNAL M	EDIC	INE		
2.	Code				ED 411				
3.	Study Pro			General Medicine					
4.	Institution			Ss Cyril and Methodius University, Medical					
			air, Department)	Faculty, Department of Internal Medicine					
5.	Degree of education		Integrated 6-year study						
	(first or se	•		Firth (IV) / 7.Number of 21					
6.	Study year	r/semeste	er		rth (IV) / eventh and	7.Nu credi		21	
					ght (VII+	creai	ts		
					III)				
8.	Responsil	ole teach	er	Pr	of Dr Sonja G	enadie	va Stavrik l	MD PhD	)
9.	Preconditi	ons		Fulfilled criteria for VII semester					
10.	•	mode clinica	cudent will learn and cor rn treatment grounded al pharmacology	on e	etiopathogene	esis of	diseases an	ıd postu	lates of
	<ul> <li>The student will be able to assess and treat rationally the diseases of heart and blood vessels, lungs, endocrine glands, nephrological, hematological, gastroenterohepatological, rheumatological and toxicological diseases and disorders</li> </ul>								
	•	on cli	emporary clinical assessr nical examination, and la	ater	on target tria	ls (lab	oratory)		specially
	•		mporary rational treatn ledge and on evidence -				cent therap	eutic	

# 11. Brief content:

#### Theoretical course:

- diseases and disorders of cardiovascular system
- · diseases and disorders of lungs
- · diseases and disorders of gastroenterohepatologic system
- diseases and disorders of urinary system
- diseases and disorders of joints and connective tissues
- diseases and disorders of endocrine glands and metabolism
- · diseases and disorders of hematologic system
- · diseases and disorders of hematologic system

#### **Practical lessons:**

• clinical skills and practical application of the acquired theoretical knowledge.

# 12. Methods of studying: Interactive teaching during lectures and practical trainings, independent study by using textbooks, seminars and practical teaching 13. Total available time: 355 classes 14. Organization of the course 355 classes - theoretical course, practical

			195 classes - home	195 classes - home individual learning		
15.	Forms of teaching activities	15.1.	Theoretical course	160 classes		
		15.2.	Practical course, Seminars	195 classes		
16.	Other forms of activities	16.1.	Practice			
		16.2.	Individual tasks			
		16.3.	Individual (home) learning	160 classes		
17.	Method of assessment	•				

17 1	Toote
1/.1	Lesis

Continuous checking of knowledge (colloquium): 4 written tests. They cover the all fields of Internal medicine (8) in different combinations, depending on the group which the student attend and current schedule.

course, seminars

The students from one colloquium can get 4.5 - 8 points, and total 18 - 32 points (from 4 colloquiums).

Final exam (practical + theoretical)

- **Practical exam** ( according to the catalogue of skills) examination of a patient, differential diagnosis, therapy 13-20 points (for 10=20 points, for 9=18-19 points, for 8=16-17 points, for 7=14-15 points, for 6=13 points)
- Theoretical exam (integrative) 4 questions that are not questioned in detail, but integrative knowledge which is essential for understanding the whole subject and medical practice 18 28 points (for 10 = 26 28 points, for 9 = 24-25 points, for 8 = 22 23 points, for 7 = 20 21 points, for 6 = 18 19 points). The student is obligated to win a minimum of 49% of the predicted score for each part of the exam, to be able to be registered the points for final exam.

Otherwise, the test is considered not passed.

# Complete final exam:

The exam is a combination of colloquia which are not passed and the final exam. First, the student is obligated to pass the colloquia, and than to approache the final exam. If the student doesn't pass the colloquia, he has no right to take the final exam.

	17.2	Seminar paper/pr (oral/wr presenta	oject itten				miı	n – max		
	17.3	Active	,				miı	n – max		
		participa	ntion	Theoretical co				1-5		
				Practical cours	e			10-15		
18.	Gradin	g criteria		up 1	to 59 points			5 (five) F		
		s / grade)			to 68 points			6 (six) E		
				from 69 t	to 76 points		7 (	(seven) D		
					to 84 points			(eight) C		
					o 92 points			(nine) B		
10	Damie		ai au aturus		100 points	40 004:01 Collor		0 (ten) A		
19.		ement for king the fir		activities.	is required	to actively follow	wan of the pia	innea		
	and tar	ang the m	nai cxam		al criteria fo	or assessment of	knowledge:			
						re, the student sh	_	ninimum		
				•		al and practical c				
						l exam, the stude		ain the		
				_		continual assessr		1		
				continual		obtained the mi ts, he/she will l				
					e the final ex		oc obligated	to pass		
20.	Langu	age of inst	ruction	Macedonia						
21.		d of monit				to classes and int	teractive parti	cipation		
			ng process	in theoretic	al and practi	cal lessons.				
22.	Textbo		ndatamı							
		1.	ndatory Harrison	n's Principles	s of Anthony S. Fauci; 2015 by 2015					
		1.		Medicine 19/	/E Dan Longo; Dennis McGraw-					
						sper; J. Larry	Hill			
					James	son; Joseph	Education			
	22.	1				ılzo; Stephen				
				~	Hause			2017		
		2.	Goldman		Lee Goldman MD (Author), Andrew I.			2015		
			Medicin	e, 25th Edition		er MD				
					Schai	CI WID				
	22.2	2. Add	ditional				1			
1.	Subjec	t			INTERNA		EDICINE-CL	INICAL		
_	~ :				PRACTIC	E				
2.	Code	D			MED 611	41				
3. 4.		Program			General Me	and Methodius	University	Medical		
4.	Institution (Unit, Institute, Chair, Department)				•	and Methodius	•			
5.	Degree of education			-	5-year study	2.123101110				
	(first c	r second c	•			- *				
6.	Study	year/seme	ster		Six (VI) /	7.Number	of 14			
					Eleven	and credits				
					twelve (XI-XII)	F				
8.	Respo	nsible tea	cher			nja Genadieva St	avrik MD Phl	)		

10. Student will acquire the skill of modern clinical assessment and treatment. Student will be able independently to make admission of a patient, to make urine analysis blood counts pretransfusion test with legal documentation insertion of urinary catheter rectal DRI (digital rectal investigation), rectoscopy ECG (technique and analysis), cardiopulmonary resuscitation interpretation of lungs rtg injections (subcutaneous, intramuscular, intravenous) will watch and assist in interventions such as: sternal puncture and smear, pleural puncture, abdominal puncture, insertion of gastric tube and gastric lavage, insertion of a central venous catheter, measerement of central venous pressure, gastroscopy, gastrolavage, tracheal intubation, artificial ventilation, peritoneal dialysis.

#### 11. Brief content:

Introduction to diagnostic and therapeutic procedures in the field of Internal Medicine

Practice: 320 hours

Clinical practice will be organized during 8 working weeks with full time of 8 hours The four turnuses will be organized during the XI and XII semester.

Three days will be organized in the ambulances for family medicine.

The practice will be organized in groups of 2-5 students on mentoring principle with professors and assistants.

During the turnuses, the departments and mentors will be changed.

Student's daily activities will be noticed in special "diary of activities", which will be verified with the signature of the mentor.

#### **Practical lessons:**

• clinical skills and practical application of the acquired theoretical knowledge.

# 12. **Methods of studying:**

	participation in professional meetings in the clinic participation in morning rounds participation in daily work in the departments								
	participation in interventions in the field of Internal medicine Interactive teaching during lectures and practical trainings, independent study by using textbooks, seminars and practical teaching								
13.	Total a	available time:			320 hours				
14.	Organi	ization of the course			Practice 320 hours				
15.	Forms	of teaching ies	15.1.	Theoretic	al course				
			15.2.	Practical Seminars	,				
16.	Other	forms of activities	16.1.	Practice		320			
			16.2.	Individua	l tasks				
			16.3.	Individua	l (home) learning				
17.	Metho	d of assessment							
	17.1	Practice	Clinical full time The four semester Three da medicing The prace mentoring During to changed Student'	e of 8 hours r turnuses v r. ays will be e. ctice will be ng principle the turnuses l. s daily acti	Il be organized during vill be organized during organized in the ambiguous evith professors and another the departments are	oulances for family s of 2-5 students on assistants. and mentors will be I in special "diary of			

	17.2	Seminar paper/project (oral/written presentation)	min – max
	17.3	Active participation	min – max Theoretical course Practical course
18.		ng criteria s / grade)	The student assessment is descriptive ( passed )
19.		rement for signature king the final exam	The student is required to actively follow all of the planned activities.  Conditional criteria for assessment of knowledge: In order to get a signature, the student should obtain minimum points in both theoretical and practical courses. In order to take the final exam, the student should obtain the minimum points in the continual assessments; If the student has not obtained the minimum points in the continual assessments, he/she will be obligated to pass them before the final exam.
20.	Langua	age of instruction	English
21.	quality	d of monitoring the of teaching process	Attendance of students to classes and interactive participation in theoretical and practical lessons.
22.	Textbo	ooks	

		Ma	ndatory						
		1.	Harrison's Principles	of	Anthony S.	Fauci;	2015	by	2015
			Internal Medicine 19/E		Dan Longo	; Dennis	McGı	aw-	
					L. Kasper;	J. Larry	Hill		
					Jameson; J	oseph	Educa	ation	
	22.1				Loscalzo; S	Stephen			
	22.1.				Hauser				
		2.	Goldman-Cecil		Lee Goldm	an MD			2015
	Medicine, 25th Edition			(Author),	Andrew I.				
					Schafer MI	)			
	22.2.	Ado	ditional						
1.	Subject			GE	RIATRIC N	MEDICINE	2		
2.	Code			ME	ED 626				
3.	Study Prog	ram		General Medicine					
4.	Institution			Ss	Cyril and	Methodius	Uni	versity,	Medical
	(Unit, Insti	tute,	Chair, Department)	Fac	ulty, Departi	ment of Inte	rnal M	Iedicine	
5.	Degree of e			Inte	egrated 6-yea	r study			
	or second o	•				1		1	
6.	Study year	/sem	ester		(VI) /	7.Number	of	2	
					venth (XI)	credits			
8.	Responsib	le tea	acher	Pro	f Dr Sonja G	enadieva St	avrik l	MD PhD	)
9.	Precondition	ons		Coı	mpleted cour	se in Interna	al Med	licine	

- Course objectives (competencies):
  - Introduction to palliative medicine as an internist interdisciplinary science and its place in medical science
  - Introduction to the individual specifics of palliative medicine
  - Introduction to the particularities of the therapeutic approach in patients palliative care and terminal patients
  - Introduction to the ethical and legal aspects of palliative medicine
  - Dealing with pain with pharmacological and non-pharmacological means (ways)
  - Adopt communication skills and communication skills in special situations

#### 11. **Brief content**

#### **Theoretical course:**

- Pulmonary disorders in the geriatric population (Features in history, clinical examination and diagnostic procedures in elderly patients, diseases of the respiratory system; Respiratory failure, pneumonia, chronic obstructive pulmonary disease, chronic pulmonary heart, pulmonary, tuberculosis, lung cancer)
- Diseases of the cardiovascular system in old age (Diagnostic procedures in cardiology, electrocardiography, radiological, diagnosis of heart and lung, computerized tomography, magnetic resonance, dynamic electrocardiogram, echocardiography, phono-cardiography, Methods of nuclear cardiology; Heart failure, chronic heart failure, acute cardiogenic pulmonary edema; Inflammatory diseases of the valves reumatic fever, mitral valve disease, aortic valve disease; endocarditis; Degenerative diseases of the heart valves; Coronary disease; prevention and treatment of atherosclerosis; Disorders of heart rhythm; pulmonary thromboembolism; Heart disease in metabolic disorders; diseases aortic and peripheral blood vessels; Arterial hypertension)
- Hematological diseases in older person- anemias, myelodysplastic syndrome, leukemias (acute leukemia, chronic myeloid leukemia, chronic lymphatic leukemia), multiple myeloma, platelet disorder, coagulation disorders (DIC hemophilia, thrombosis, thromboembolism)
- Oncological geriatric diseases (breast cancer, colon tumors)
- Infectious diseases in the geriatric population (Acute inflammation of the respiratory system, viral hepatitis, herpes zoster, the Fever from unknown etiology; Purulent meningitis; Streptococcal infections; acute intestinal infections
- **Kidney disease in elderly** (primary and secondary glomerulopathy, tubulointerstitial disease, acute and chronic failure in kidneys, urinary tract infections)
- Endocrine disorders in old age (Diabetes, Thyroid Disease gland; Bone disease, osteoporosis, osteomalacya; Hormone laboratory diagnostics)
- Rheumatic diseases (degenerative diseases of the joints, osteoporosis, rheumatoid arthritis, systemic lupus, systemic sclerosis, arthritis, polymyalgia rheumatica, fibromyalgia, Rehabilitation, Physical activity and exercise in geriatric population)
- **Diseases of gastroenterology system**, (Diseases of the oral cavity, acute GI conditions, diseases of the esophagus, gastric and duodenal diseases, diseases of the small bowel and colon, diseases in anorectal area, Hepato-biliary diseases, pancreatic diseases, tumors of the gastrointestinal tract)
- **Neurological disorders** (cerebrovascular stroke, epilepsy, syncope, pain syndrome, balance disorder, ataxia, extrapyramidal system diseases, dementia, and intracranial expansive processes, neuromuscular disorders in the geriatric population.)
- **Psychiatric disorders in the geriatric population** (neuroses, psychoses, Neurotic senile syndrome, senile depressive psychosis, senile dementia, treatment of mental disorders, ethics psycho-geriatric)
- **Psychology of Aging** (Psychological theory aging, aging and skills, social relationships in old age, streenje and health)
- Changes in skin with age (most common skin disease in old age pruritus, erythroderma, action on drugs, reaction to light, hypostatic dermatitis, psoriasis; Skin infections in geriatric; The most common tumors)

12.	Methods of studying:  Interactive teaching during lectures and practical trainings, independent study by									
using textbooks, seminars and practical teaching										
13.	Total available time:				60 classes					
14.	Organization of the course				40 classes - theoretical course, practical course, seminars 20 classes - home individual learning					
15.	Forms activiti	of teaching les	15.1.	Theoreti	Theoretical course 30 class		S			
			15.2.	Practical course, 10 Seminars		10 classe	classes			
16.	Other forms of activities		16.1.	Practice						
			16.2.	Individual tasks						
			16.3.			20 classes	3			
17.	Metho	d of assessment			, ,					
			assessment (the tests).  Activity type Points							
			Activity type				Points			
							Min			
			Theoretical course (lectures) *				2			
			Practical course**			28				
			Seminar papers				/			
			Continual assessment - 2				/			
			Final exam				30			
					Total		60			
		<b>:</b> :								
			* theoretical course attendance ( lectures) 51% - 60% - 2 point; 61% - 70% - 4 points; 71% - 85% - 6 points; 86% - 100% - 8 points;							
			** prac	ctical cours	e: practice is carried	l out for 5 da	ays x 6			

			working hours provided for activities (total 30 hours). Journal of clinical activities assignments for which the student receives points. Mentoring principle.  Presence: 4 points Activity (skills): 6 points					
	17.2	Seminar paper/project (oral/written presentation)		(came), c perm	min – max			
	17.3	Active participation	Theoretical course		min – max 2			
			Practical course		28			
18.	18. Grading criteria (points / grade)		up to 59 points		5 (five) F			
			from 60 to 68 points		6 (six) E			
			from 69 to 76 points		7 (seven) D			
			from 77 to 84 points		8 (eight) C			
			from 85 to 92 points		9 (nine) B			
			from 93 to 100 points		10 (ten) A			

19.	taking the fi	nal ex		activities.  Conditional In order to g points in both In order to to minimum point If the studen	I crit get a th the ake to oints at has assess nal e	eria for assessignature, the coretical and the final examin the continuous not obtained sments, he/shexam.	essment of less student she practical con, the student ual assessmant the minim	knowle ould ob ourses. nt shou nents; um po	edge: otain mi ld obtai	nimum n the
20. 21.	Language of					rdonto to alao	and inte	ama ativu		notion in
21.	Method of m quality of tea					udents to clas ractical lesso		eractivo	e partici	pation in
22.	Textbooks	aciiii	ig process	incorctical a	nu p	ractical icsso	110.			
22.	Textoooks	Mar	ndatory							
	22.1.	1.	Harrison's P Internal Med	-		Anthony S. Dan Longo; L. Kasper; J Jameson; Jo Loscalzo; St Hauser	Dennis . Larry seph	2015 McGr Hill Educa	aw-	2015
		2.	Goldman-Ce Medi Edition	cil cine, 25th		Lee Goldma (Author), Ar Schafer MD	ndrew I.			2015
	22.2.	Add	litional					-1		
1.	Subject				PA	LIATIVE M	IEDICINE	1		
2.	Code				MED 627					
3.	Study Prog	ram			General Medicine					
4.	Institution (Unit, Instit	tute,	Chair, Departn	nent)	Ss Cyril and Methodius University, Medical Faculty, Department of Internal Medicine				Medical	
5.	Degree of e		•		Inte	egrated 6-yea	r study			
6.	Study year/semester				(VI) / venth (XI)	7.Number credits	of	2		
8.	Responsib	le tea	cher		Prof Dr Sonja Genadieva Stavrik MD PhD				)	
9.	Preconditio	ns			Completed course in Internal Medicine					
10.			objectives (corction to palliate		as ar	n internist int	erdisciplina	ry scie	nce and	its

place in medical science

- Introduction to the individual specifics of palliative medicine
- Introduction to the particularities of the therapeutic approach in patients palliative care and terminally ill patients
- Introduction to the ethical and legal aspects of palliative medicine
- Dealing with pain with pharmacological and non-pharmacological means
- Adopt communication skills and communication skills in special situations

### 11. **Theoretical course:**

- Basics palliative medicine (manner of organizational structure, International development)
- Types and ways of organizing palliative care outpatient, hospital, consulting
- Symptoms of chronic pain and handling with it- interdisciplinary approach
- Handling with Gastrointestinal symptoms (constipation, diarrhea, nausea, vomiting)
- Handling with Pulmonary symptoms-dyspnea, cough
- Handling with Neuropsychiatric symptoms, anorexia, cachexia
- Care for terminally ill
- Psychological and physiological aspects of palliative care

16.2.

16.3.

- Ethical and Legal Aspects of palliative medicine
- Teams for implementation of palliative care

#### **Practical course**

 The student will acquire knowledge about the most common conditions in palliative care, ways for its implementation and organization. Recognition of terminal sick patient, most common indications for palliative care, recognition specifics. Models of communication and special situations of communication

## 12. **Methods of studying:**

Interactive teaching during lectures and practical trainings, independent study by using textbooks, seminars and practical teaching

13.	Total available time:			60 classes	
14.	Organization of the course			40 classes - theoretical course, practical course, seminars	
				*	divides of the amino
				20 classes - home in	dividual learning
15.	Forms of teaching activities	15.1.	Theoretical course		30 classes
		15.2.	Practical	course,	10 classes
			Seminars	S	
16.	Other forms of activities	16.1.	Practice		

Individual tasks

Individual (home) learning

## 17. Method of assessment

Wicthor	i or assessiner
17.1	Tests

In order to get a signature for the course, students are requested to actively participate in the activities, including the continual assessment (the tests).

20 classes

Activity type	Points
	Min
Theoretical course (lectures) *	2
Practical course**	28
Seminar papers	0
Continual assessment - 2	0
Final exam	30
Total	60

## Points for the activities of the student:

\* theoretical course attendance ( lectures)

51% - 60% - 2 point;

61% - 70% - 4 points;

71% - 85% - 6 points; 86%

- 100% - 8 points;

\*\* **practical course**: practice is carried out for 5 days 6 working

				which the stud mentoring prir	lent re nciple.	•	•	or
	17.2	Seminar paper/pr (oral/wr presenta	roject ritten				min	ı – max
	17.3	Active particip	· · · · · · · · · · · · · · · · · · ·	Theoretical co			min	1 – max 2 28
18.	Grading criteria up (points / grade) from 60 from 60 from 77			from 60 t from 69 t from 77 t	to 68 j to 76 j to 84 j	points points	7 (	5 (five) F 5 (six) E seven) D (eight) C (nine) B
19.	Requirement for signature and taking the final exam			from 85 to 92 points 9 (nine) B from 93 to 100 points 10 (ten) A  The student is required to actively follow all of the planned activities.  Conditional criteria for assessment of knowledge: In order to get a signature, the student should obtain minimum points in both theoretical and practical courses. In order to take the final exam, the student should obtain the minimum points in the continual assessments; If the student has not obtained the minimum points in the continual assessments, he/she will be obligated to pass them before the final exam.				0 (ten) A nnned ninimum nin the
20.	Langua	age of ins	truction	Macedonia		Aum.		
21.	Method quality	d of moni of teachi	toring the ng process			udents to classes and in I practical lessons.	teractive partic	cipation
22.	Textbo		andatory					
		1.	Palliative casebasee		A	Neil MacDonald, Doreen Oneschuk, Neil Hagen-	(2012 – Oxford University Press, third edition)	2012
	22.1	2.	Goldman M Edition	-Cecil Iedicine, 25th		Lee Goldman MD (Author), Andrew I. Schafer MD		2015
		3.		's Principles of Medicine 19/E		Anthony S. Fauci; Dan Longo; Dennis L. Kasper; J. Larry Jameson; Joseph Loscalzo; Stephen Hauser	2015 by McGraw- Hill Education	2015
	22.2	. Ad	ditional					<u>'</u>
1.	Subjec	t				RMATOVENEROLO	GY	
2.	Code	_				D-414		
3. 4. 5.	Institut (Unit, 1	Institute,	Chair, Depa	rtment)	General Medicine Ss Cyril and Methodius University, Medical Faculty, University Clinic of Dermatology Integrated 6-year study			
	_	nd cycle)	•					

6.	Study year/semester			th (IV) / enth (VII)	7. Number of credits	5
8.	Responsible teacher		Ass	oc. Prof. Suz	ana Nikolovska,	PhD, MD
9.	Preconditions			fieled condit	ions of enrollem	ent in VIIth
10.	Teaching goals (compete  The student will acquire to the morphological changes of the dermatovenereology  The student will acquire to diseases, as well as sexual  The student will have the dermatovenerology and communication and collain  The student will be aware communication and collain	knowledge a f the skin as knowledge a lly transmit skills to rec reate diagno e of the imp boration wi	about the atted infect cognize the ostic and infect of the the patients.	most commonions e most commonions tational thera taking propent and his f	on and urgent der mon and urgent ca apeutic protocol. er dermatovenero family	matology onditions in blogical history,
	Brief content:  Theoretical course:  Structure and function of the skin, morphology of skin lesions  Treatment principals in dermatovenerology  Infections and infestations, STI  Emergency conditions in dermatology  Inflammatory skin disorders  Diseases of nail, hair and pigmentation  Reactive skin diseases  Skin signs of systemic diseases  Drug reactions  Neoplasms  Practical lessons:  Practicing the clinical skills and practical application of the acquired theoretical					
12.	Methods of studying: Interactive teaching during using textbooks, computer-a			d practical tr	ainings, independ	lent study by
13.	Total available time:			150 classes		
14.	Organization of the course			course, sem	theoretical cours inars home individual	•
15.	Forms of too shing	15.1.	Theoretic		23 clas	
	Forms of teaching activities	15.2.	Practical		40 clas	sses
16	activities		Practical Seminars	course,		sses
16.		16.1.	Practical Seminars Practice	course,	40 clas	sses
16.	activities		Practical Seminars Practice Individua	course,	40 clas 12 clas	sses

17.

Method of assessment

	17.1	Tests	Continual assessment	points:	min – max 18 - 30		
			Two (2) written tests (MS dermatovenereology for w foreseen for formative asse	hich the curriculum is	of		
			Each test should be scored passed.	in the range 9-15 to be c	onsidered		
			1		min – max		
		Final exam	Oral exam* Practical exam**	points:	21 - 35 12 - 20		
			Oral exam* (integrative) - examine integrative knowle whole of the subject and me (for grade 10=33-35 points: 8=27-29 points; for grade 7 points)  Practical exam** – consist (for grade 10=10 points; for grade 7=7 points)	edge that matters for und edical practice in dermat g for grade 9=30-32 point =24-26 points; for grade ts of 2 long cases grade 9=9 points; for g	derstanding the covenerology ats; for grade e 6=21-23		
	17.2	Seminar paper/project	The student is obliged to a for each part of the examons considered unsuccessful.  The grade in the final example, and on the basis of the activities.	n separately. Otherwise m is given according to	the grading		
		(oral/written presentation)					
	17.3	Active participation	Theoretical course Practical course		min – max 1-2 6 - 8		
18.	Grading criteria (points / grade)		up to 59 points from 60 to 68 points from 69 to 76 points from 77 to 84 points from 85 to 92 points		5 (five) F 6 (six) E 7 (seven) D 8 (eight) C 9 (nine) B		
19.	Requirement for signature and taking the final exam		from 93 to 100 points 10 (ten) A  Conditional criteria In order to get a signature, the student should obtain minimum points in both theoretical and practical courses, and seminars. In order to take the final exam, the student should obtain the minimum points in the two continual assessments (tests). If the student has not obtained the minimum points in the continual assessments, he/she will be obligated to pass them before the final exam.				
20. 21.		age of instruction	English Students' anonymous	avaluation of the cov	rea as well co		
	quality	d of monitoring the of teaching process	Students' anonymous teachers and assistants.	evaluation of the cou	ise as well as		
22.	Textbo						

22.1.

Mandatory

		1.	Klaus Wolf, Richard Allen	Fitzpatrick's Color	Mc	200	9
			Johnson	Atlas and Synopsis	Graw		
				of Clinical	Hill		
				Dermatology			
ı		2. Ancevski A, Gocev G, Dermatovenerology		Kultura	200	5	
1		Pavlova Lj, Petrova N		Skopje			
Ì							
		Additional					
		1.	Sue Burg, Dinny	Oxford Handbook of	Oxford		2011
	22.2		Wallis	Medical	University		
	22.2.			Dermatology	Press		
		2.	Christopher Griffiths	Rook's Text Book of	John V	Viley	2016
Í			Jonathan Barker, Tania	Dermatology	and Sons	Ltd	
			Bleiker, Robert Chalmers,				

	Bleiker, Robert Chalmers, Daniel Creamer		
3.			
4.			

1.	Subject	MEDICAL PSYCHOLOGY AND SOCIOLOGY			
2.	Code	MED 114			
3.	Study Program	General medicine			
4.	Organizing Institution ( Unit,	UKIM-Faculty of Medicine			
	Institute, Chair, Department)	University Clinic of Psychiatry, Skopje,			
		Belgradska b.b.			
		Department of Psychiatry and Medical			
		Psychology,			
5.	Educational degree (first or second cycle)	Integrated cycle			
6.	Study year /semester	first/first 7. Number of credits 5			
8.	Responsible teacher	Prof. dr. Marija Raleva			
9.	Preconditions:	none			

# 10. Teaching goals of the study program (competencies):

- To introduce students with the basics of Medical Psychology and Medical Sociology: (basic concepts, psychological processes, psychological factors in health and illness)
- To enable the students to develop communication skills, establishing contact with the patient and the practical application of these skills
- To provide skills and knowledge for applying biopsychosocial approach to diagnosis and treatment of patients
- To provide skills and knowledge for exploring social determinants of health and the meaning of health and illness in the social context

## 11. Contents of the study program:

Theoretical course:

Psychological processes across the life span

- Consciousness and sleep levels of awareness
- Senses and perception the interpretation of sensory stimuli
- Attention selection of information, planning
- Cognitive development the changes in the capacities of the individual as a function of age and experience frombirth to adulthood
- Cognitive aspects of ageing the changes as a function of age and experience during later life
- Socio-emotional relationship across the life span
- Attachemnt
- Learning interaction with the environment, stable change in behaviour or understanding
- Memory the cognitive processes of encoding, storing and retrieving information as a function of age
- Language and speech
- Development and personality structure, theories of personality development
- Psychological defense mechanisms and their function

## Psychological factors in health and illness

- Biological basis of behavior (genes and behavior)
- Mental health and mental illness
- Psychological factors in health promotion and illness prevention
- Psychological interventions interventions to change behaviour, modify risk, and improve outcomes

- Psychological processes in disease pathways and mechanisms from psychological states to disease end points
- Psychological aspects of pain

## Psychological responses to illness

- Emotional, cognitive and behavioural responses to illness
- Coping with illness adjusting behaviour or thoughts to reduce effects of an acute or chronic illness
- Psychological stress and trauma
- Death, dying and bereavement
- Burn out syndrome

## Psychological counseling

### Social determinants of health and illness:

- Social norms, social biography, healthy lifestyles, self-care
- Social structure, social inequalities, social stress and coping
- Violence and health: ecological model, risk and protective factors
- Social change and the meaning of gender, sexuality, suicide, mental illness, disability, death

### **Practical course:**

Human communication and communication skills training

- Meaning of communication
- Interaction doctor-patient: compliance, health education and difficulties in communication
- Leadership and teamwork
- Social processes shaping professional behavior Psychological response to illness
- Response of the patient to the illness
- Response of an ill child
- Patient with acute illness
- Patient with chronic illness
- Psychological profile of the personality of the patient

-	12.	<b>Methods of studying:</b> In	teractiv	e lectures	, tutorials / wor	kshops, seminars
-	13.	Total no. of hours:			hours 75	
-	14.	Distribution of the avail	lable tin	ne		
-	15.	Type of educational activity	15.1	Lectures-theoretical course		38 hours
			15.2	Practica clinical) seminar work	,	Practicals 28 hours Seminars: 10 hours
-	16.	Other types of	16.1	Project assignments		hours
		activities	16.2	Individual tasks		hours
			16.3	Home st	tudying	hours
-	17	A 4 . C1 1 . 1		·	·	

# 17. **Assessment of knowledge:**

no1	nts

points			
17.1	Tests		minmax.
		3 Continuous tests	total points
		• Test 1	22 - 40 points
		• Test 2	22-40 points

		Final e	xam				min max.
					Oral exam	44-80 points	
	17.2		ar work/projontation: writt		Seminar works	5-10 points	minmax.
	17.3	Active	e participation	n	771		minmax.
					Theoretical course Practical course		points 1-3 points 4-7
18.	Know	ledge as	ssessment	11	p to 59 points	<u>l</u>	5 (five) F
10.	criteri				0 to 68 points		$6 (\sin E)$
	(poin	ts/grade	e)		9 to 76 points		7 (seven) D
					7 to 84 points		8 (eight) C
				8	5 to 92 points		9 (nine) B
				93	to 100 points		10 (ten) A
19.	Criter	ia for ol	otaining a	Condi	tional criteria for ass	essment of kno	wledge: To
	final e		taking the	theoret continu student test is a Studen the fina or have final ex obtained	a signature the studentical as well as practical as well as practications knowledge assess that may directly attend that precondition to attent who have passed bear all exam. Student who en't attended the first exam. Assessment of the dassed on the sum of es, including the tests	al course and se sment is not obli- he final exam. P d the second exa- oth tests are not haven't passed test are obliged to be overall perfor- f points from ov	eminars. The igatory, the assed first am. attending the first test to attend the mance is erall
20.	Langu	age of t	the course	Englisl			
21.			valuation of		mous student's evalua	tion of the subje	ect, teachers
	the qu	ality of	education	and co	llaborators involved in	the educational	l activities
22.	Litera	ture					
		Manda	atory textboo				
		1	Autho Chadlovski G, Filipovs A, Belevs D.	ska	Title Medical Psychology	Publisher Prosvetno Delo, Skopje	Year 2004
		2			Authorised lectures		
	22.1	3			Practicum of exercises in Medical Psychology and Sociology	In preparation	
		4	Branislav Sarkanjac Stefan Kost	& covski	Sociology of Health and Illness	Faculty Philosophy, Skopje	of 2010
		5					
		6					
		7					
	22.2	Additi	onal literatur		m:.1	D 11' '	**
			Autho	r	Title	Publisher	Year

OCCUPATIONAL MEDICINE

Subject

2.	Code	MED-526
3.	Study Program	General medicine

4.	Organizing Institution (Unit, Institute, Chair, Department)	UKIM-Faculty of Medicine Cathedra of Occupational Medicine					
5.	Educational degree (first or second cycle)	Integrated cycle					
6.	Study year/semester	Fifth (V) year / Tenth (X) semester					
7.	Број на ЕКТС кредити	2					
8.	Responsible teacher	Prof. Dr Jovanka Karadzinska Bislimovska, Head of Chair * the education process is performed by all members of the Cathedra					
9.	Preconditions for starting the subject	Passed first part of the professional exam Completed criteria for VII semester					
10.	Teaching goals of the study program (competencies):  Adoption of the knowledge, skills, and basic principles in occupational medicine, principles, and practice of health and working environment						
11.	Contents of the study program:						

## **Theoretical course:**

- Physiology and psychology of work;
- Ergonomics, Ecology of work and working environment's surveillance
- Physical hazards in working environment and health's effects;
- Chemical hazards in working environment and health's effects;
- Psychosocial factors at work and health's effects;
- Biological hazards in working environment and health's effects
- Occupational diseases, work-related diseases and impairments of selected organs and systems
- Preventive measures, Preventive strategy

### **Practical course:**

- Microclimate in working environment; workplace analysis;
- Noise in working environment and hearing assessment;
- Ionizing radiation, personal dosimeters, safety measures;
- Lighting in working environment and sight assessment;
- Air pollution in working environment;
- Functional capacity assessment: cardio-respiratory system, anthropometry;
- Preventive medical examinations:
- Occupational diseases (case reports)
- Work-related-diseases (case reports)
- Pneumoconiosis and RTG classification-interpretation;
- Methods and procedures in work ability assessment-practical work;
- Specific occupational risks in exposed workers in different sectors and industries
- Workers' Preparedness and Response to disasters
- Analysis of research data and scientific publications in the field of occupational medicine

12.	Methods of learning: Lectures with interaction Poster preparation and presentation	ctive approach; Practical work, Seminars,
13.	Total available amount of learning hours	60 hours
14.	Distribution of the available learning time	45 hours lectures, practical work,
		seminars, project tasks

1 1.	Distribution of the available			seminars, pro	ject tasks	
				15 hours hom	ne learning	
15.	Types of educational	15.1.	Lectures-theoretical		24 hours	
10.	activities	10.11	course		21 110 0115	
		15.2.	Practica	l work	Practical work: 16 hours	
				ory, clinical),	Seminars: 2 hours	
16.	Other types of activities	16.1.	seminar Project		3 hours	
10.	Other types of activities	16.1.	Individu		3 Hours	
		16.3.	Home le		15 hours	
17.	Types of knowledge asse	ssment		<u> </u>		
	17.1 Tests					
			G = 174	:	minmax.	
			Cont	inuous tests		
			Cont	inuous testing	of knowledge (colloquium)	
				itten test points		
					chology of work,	
				Ergonomics, Workplace risk assessment and ecological monitoring, Occupational diseases,		
			work	work-related diseases and injuries at work,		
			Phys	ical factors of v	working environment	
			Fina	Final exam		
				- max.		
			12-2	t <b>ten exam*</b> poi	nts	
				exam** point	S	
			18-3	-		
			* Wı	ritten exam - Cl	nemical factors of working	
					alth's effects, occupational	
				• •	gases, pesticides, organic	
				oounds ral exam (integ	grative) including physical,	
					l, and psychosocial	
					occupational diseases, and	
			_		cted organs and systems,	
			preve	entive measure	3	
			The	student is oblig	ed to have a minimum of	
				_	each part of the exam in	
			parti	cular, in order t	to enable them to be	
				-	for the final exam.	
				rwise, the exan ccessful.	n is considered	
1			unsu			

	17.2	Seminar work/proje (presentation: writte		Project activ	min max. ity (part of practical work) 2-5			
	17.3	Active participation		Theoretical of Practical cou				
				51%-60% 2 61%-70% 3 71%-85% 4 86%- 100% ** Practical 4 hours each Attendance a 6-8 points Active partic 4-7 points	3 points 4 points			
18.	criteria	ledge assessment a: a: s/grade)	60	to 59 points to 68 points to 76 points	5 (five) F 6 (six) E 7 (seven) D			
			77 85	to 84 points to 92 points	8 (eight) C 9 (nine) B			
19.		a for obtaining a are and taking the xam	Conditio In order attend the score min The stude the contice Addition assessment assessment attends and the grade rating tale.	eoretical, pra- nimum points ent can take t nuous tests w ally, he/she h ents, and then le for the subj ble, based on	gnature, the student is required to ctical courses and seminars and to s. he final exam if he/she has passed with minimum points; has to pass the continuous can take the complete final exam. Hect is formed according to the the sum of the points from all the bus testing and the final exam.			
20.		age of the course	English					
21.		d for evaluation of the of education	,		evaluation of the subject, teachers olved in the educational activities			
22.	Literat		1 20 20 20					
	22.1. Mandatory textbooks							

1.	Bislimovska Karadzinska J, Minov J, Risteska- Kuc S, Mijakoski D, Stoleski S.	Occupational Medicine	University "Sts. Cyril and Methodius", Skopje	2011
2.	Stikova E.	Occupational Medicine	Faculty of Medicine, Skopje	2012
3.	William N Rom; Steven	Environmental and occupational medicine	Wolters Kluwer/Lippincott Williams & Wilkins, Philadelphia, USA	2007

			Markowitz; Book			UCLA Colum	University,	
						Univer	Sity	
		۱. ۸	ditional literature					
		1.	Robert B.	Dublic	Health	OEM I	Dun aa	2008
		1.	Wallace ed,	and	неаш	Publica		2008
			MaxeyRosenauLast	Prever	ntive	Denve	<i>'</i>	
			WaacyRoschauLast	Medic			orleans, USA	
				Wiedie		110 0	ricans, OST	
	22.2.	2.	Robert J. Gatchel,	Handb	ook of	Imprin	t: Springer,	2012
			Izabela Z.		oational		d University,	
			Schultz	Health	n and	Boston	•	
				Welln	ess			
1.	Subject				MEDICAL		S AND	
2.	Code				MED-126	<i>J</i> OGY		
3.	StudyPro	aran	1		General med	dicine		
4.			stitution ( Unit, Institu	te	UKIM-Facu		edicine	
7.	Chair, De	_	• • • • • • • • • • • • • • • • • • • •	ις,	Institute of forensic medicine, criminalistics			
	,	•	,		and medical deontology			
							Medical deontol	ogy
5.	Education	nal d	egree (first or second c	ycle)	Integrated cy	ycle		
6.	Studyyea	r/sen	nester		First/ II	7.	Number of	2
							credits	
8.	Responsil	ole te	eacher		Head teache	r Prof. d	-r. Zdravko Cha	kar
					*the teachin	a is nort	ormed by all and	faccore
					of the	g is peri	formed by all pro	1088018
					Chair of me	dical dec	ontology	

**Preconditions:** 

## 10. Teaching goals of the study program (competencies):

- · adoption of the historical basis for the development of medical ethics and deontology
- adoption of the most important elements of medical ethics
- adoption of the rights, in particular the duties of health workers in terms of patients and their relatives and other representatives
- introduction to proper treatment in their daily practice trough examples
- interactive learning, debate and seminar papers as tools for easier adoption of matter and free thinking on certain ethical issues

### 11. Contents of the study program:

## **Theoretical course:**

- Introduction to the general principles of ethics as a philosophical science
- Introduction to ethical principles in different historical eras
- Introduction to bioethics
- Known philosophical teachings and philosophers that interface with medical ethics
- General principles of medical ethics
- Respect and equal treatment
- Communication and consent (informed consent)
- Presumed consent
- Decisions on behalf of patients who are unable to individually give consent, the notion of representation, participation of such patients to the moment of their end capabilities of understanding
- Medical secret
- Beginning of life, ethical problems in biological assisted fertilization (BAF)
- End of life, ethical problems of euthanasia
- Ethical tenets of behavior among health workers
- Ethical tenets of behavior among health workers and patients
- Ethical tenets of behavior among health workers and relatives of patients
- Transplant and ethical dilemmas, especially in situations of possible cadaveric transplants
- Medical error and ethical problems
- Codes of medical ethics and deontology
- Most important conventions and declarations, particularly after 1948 that basically have the Universal Declaration of Human Rights by the UN

**Seminar papers:** Students themselves choose matter in the field of medical ethics and deontology.

12.	Metho	Methods of studying: Interactive teaching, debate and seminar papers									
13.	Totaln	o. ofhours:			60 hours						
14.	Distrib	ution of the availab	le time		30 hours lectu	ures-theoretical course					
					30 hours hom	ne studying					
15.	Type o	f educational	15.1	Lectures	-theoretical	30 hours					
	activity	7		course							
			15.2	Practical	S	/					
				(laboratory,							
				clinical), seminars,							
				team wor	rk						
16.	Other	types of activities	16.1	Project assignments		/					
			16.2	Individual tasks		/					
			16.3	Home stu	ıdying	30 hours					
17.	Assessi	ment of knowledge:	points								
	17.1	Tests		Perio	dic evaluation	min. 24 – max. 40					
					•						

		Final exam		Written exam				
				min. 24 – ma	x. 40			
	17.2	Seminar work/proje		Seminar work				
		(presentation: writted oral)	en and	min. 6 – max	. 10			
	17.3	Active participation	1	*Theoretical				
				min. 6 – max				
					theoretical course			
					6 points			
				61-70% - 6	/ points			
				71-80% - 81-90% -	8 points			
					9 points 10 points			
				91-100% -	10 points			
18.	Know	ledge assessment	up to 59 p	oints				
	criteria					5	(five)	F
	(points	s/grade)						-
			6	0 to 68 points		6	(six)	Е
			69 to 76 points			7	(seven)	D
			7	7 to 84 points		8	(eight)	С
			8	5 to 92 points		9	(nine)	В
			93	to 100 points		10	(ten)	A

19.	9. Criteria for obtaining a signature and taking the final exam			To get and se	Conditional criteria for assessment of knowledge: To get a signature, the student should attend theoretical classes and seminars and gain a minimum score.  In order to access the final exam student should pass the predicted continuous check or to win at least 30% of the total				
			oreliminary exam. In st pass the preliminar	the exam					
				The final grade is formed according to the table of grades based on the sum of points from all activities, continuous checks, preliminary exam and final exam.					
20.	Langua	age of th	ne course	English					
21.				Anonymous student's evaluation of the subject, teachers and collaborators involved in the educational activities					
22.	Literat	ure		1					
		Manda	atory text book	S					
			Author	r	Title	Publisher	Year		
	22.1	1	Wendy A Rogers Annette Braunack - Mayer		Practical Ethics for General Practice	Oxford University Press	2009		
	20. 21.	20. Langua 21. Metho the qua	signature and the final exam  20. Language of the 21. Method for every the quality of example 22. Literature  Manda	20. Language of the course 21. Method for evaluation of the quality ofeducation  22. Literature  Mandatory text book  Author  22.1 1 Wendy A Ro Annette	signature and taking the final exam  In ord predict number session then appredict the properties of the session that appredict number session then appredict the properties of the session that appredict number session then appredict number session that number session the number session that number session	signature and taking the final exam  To get a signature, the student and seminars and gain a minimular of access the final predicted continuous check on number of points on the predicted continuous checks, predicted continuous checks on the predicted continuous checks on the predicted continuous checks on the predict	signature and taking the final exam  To get a signature, the student should attend theore and seminars and gain a minimum score.  In order to access the final exam student should predicted continuous check or to win at least 30% number of points on the preliminary exam. In session, the student should first pass the preliminar then approach the final exam.  The final grade is formed according to the table based on the sum of points from all activities, checks, preliminary exam and final exam.  20. Language of the course English  21. Method for evaluation of the quality ofeducation  Anonymous student's evaluation of the subject, tear collaborators involved in the educational activities  22. Literature  Mandatory text books  Author Title Publisher  22.1 Wendy A Rogers Practical Ethics for General Practice University Press		

		2	Prof. d-r. Karposh Boshkoski		ical ethics and atology	OZ Dizajn, Sko	pje	2007
		3		med	ual of ethics for ical doctors , translation	Macedonian Medical Association, Sk	topje	2005
	Additional literature					ļ		
			Author		Title	Publisher		Year
	22.2	1	Prof. d-r. Zdravko Chakar	Decl	ection of larations, ventions, Codes laws			
1.	Subjec	+			NEUROLOGY			
2.	Code	ι			MED 111			
3.		Program			General Medicine			
4.	Institut	tion	, Chair, Department)		Ss Cyril and Methodius University, Medical Faculty, Clinic of Neurology			dical
5.	Degree		education		Integrated 6-yea			
6.		year/sen			Forth (IV)/VII	7.Number of credits	9	
8.	Respo	nsible te	eacher		Prof. Dijana Nik	odijevic, PhD, M	D	
9.	Precon	ditions			Fullfilled condition for VII semester			
10.	• T	Teaching	goals:					

- Introduction to neurological symptoms and signs
- Introduction to neurological diseases
- Introduction to diagnostic methods and procedures used for the diagnosis of neurological diseases
- Introduction to management of neurological diseases
- Introduction in pharmacological and non-pharmacological treatment of neurological diseases
- The student to learn and master skills in the frame of rational diagnosis and contemporary treatment based on etiology and pathogenesis of the diseases and postulates of clinical pharmacology
- The student to be able to rationally clinically judge and treat disease of the nervous system
- Contemporary clinical judgement will be based according to the rational diagnosis, especially neurologic examination, and later on the special investigations (laboratory, neurophysiologic, morphologic)
- Contemporary rational treatment will be based on the latest therapeutic knowledge and evidence based medicine

### 11. Brief content:

#### **Theoretical course:**

- Diagnostic methods for determining disturbances and diseases of the central and peripheral nervous system
- Etiology and pathogenesis and clinical manifestations of the disturbances and diseases of the central and peripheral nervous system
- Therapy for the disturbances and diseases of the central and peripheral nervous system **Practical lessons:**
- Recognition of neurological symtoms and neurological signs
- Topographic localization of the neurological symptoms and signs
- Learning clinical skills
- practical application of the acquired theoretical knowledge

## 12. **Methods of studying:**

Interactive teaching during lectures and practical trainings, independent study by using textbooks, visual studying of neurological signs and neurological diseases, practical exercises on patients with neurological diseases with neurological symptoms and signs, computerassisted learning.

13.	Total available time:				270 classes		
14.	Organi	zation of the course			90 classes - theoretical course, practical		
					course, seminars		
					180 classes - home	individual learning	
15.	Forms activiti	of teaching les	15.1.	Theoreti	cal course	30 classes	
			15.2.	Practical	course,	60 classes	
				Seminar	S		
16.	Other forms of activities		16.1.	Practice			
			16.2.	Individu	al tasks		
			16.3.	Individu	al (home) learning	180 classes	
17.	Metho	d of assessment					
	17.1	Tests				min – max	
			Continu	ıal assessm	ent – test	15-25	
			Final e examin		test + practical exai	mination +oral	
			4.	Final test:		15-25 points	
			5.		xamination	20-30 points	
			6.		knowledge of the whole 20-45 points		
			gradi	_		is given according to the sum of points obtained in	

			all of the activities.				
	17.2	Seminar		min – max			
		paper/project		1 - 2			
		(oral/written					
		presentation)					
	17.3	Active		min – max			
		participation	Theoretical course	1-2			
			Practical course	4 - 6			
			Completed textbook	mandatory			
18.	Gradin	g criteria	up to 59 points	5 (five) F			
	(points	/ grade)	from 60 to 68 points	6 (six) E			
			from 69 to 76 points	7 (seven) D			
			from 77 to 84 points	8 (eight) C			
			from 85 to 92 points	9 (nine) B			
			from 93 to 100 points	10 (ten) A			

20.	Requirement for signature and taking the final exam  Language of instruction  Method of monitoring the			activities Condition In order points in a semina In order minimum the stude continua them bef English	The student is required to actively follow all of the planned activities.  Conditional criteria for assessment of knowledge: In order to get a signature, the student should obtain minimum points in both theoretical and practical courses, and to present a seminar paper; In order to take the final exam, the student should obtain the minimum points in the test during continual assessments; If the student has not obtained the minimum points in the continual assessments, he/she will be obligated to pass them before the final exam.  English  Attendance of students to classes and interactive participation				
21.							I interactive par	ticipation	
22.				in theore	tical an	d practical lessons.			
<i>LL</i> .	Textbooks Mandatory								
	22.1.	1.	Principles of	neurology	7	Adams and Victor'	S Allan H. Ropper, Martin A. Samuels, Joshua Klein	2014	
	22.2.	1. 2.	Clinical Neurology in practice			Roger S, Aminof M Gringerb D  Walter Bradley, Robert Daroff Gera	Hill Companie Inc. Butterwor	s th- 1996	
			pructice			Fenichel C. David Marsden			
1.	Subject					ROBIOLOGY AND	PARASITOL	OGY 1	
2.	Code				MED-				
3.	Study Prog		\$44\$ ( TT */			al Medicine			
4.		_	itution ( Unit, , Department)			I-Faculty of Medicin dra of Microbiology		v	
5.	1		gree (first or s			ated cycle			
6.	Study year/semester				II year		mber of	4	
8.	Responsibl	le tea	cher		Head of department/cathedra Prof. Dr. Zaklina Cekovska  Teaching is conducted by following members of the Cathedra of Microbiology and Parasitology				

Completed course in Medical Microbiology 1

**Preconditions:** 

9.

## 10. Teaching goals of the study program (competencies):

## **Course objectives (competencies):**

## This course program aims to enable students:

- To gain knowledge about different types of micro-organisms; to study their morphology and physiology;
- Get to know the prevalence of microorganisms in different ecosystems and their mutual associations, including the normal microflora of the host;
- To study the genetics of bacteria;
- To gain insights into the factors of virulence of microorganisms and to widen the understanding of the pathogenesis of infections they cause;
- To be able to successfully and accurately setting microbiological diagnosis of various infectious conditions;
- To explore susceptibility testing methods of the causative pathogens, which also represents a prerequisite for successful therapy (extremely important in their further medical practice).

## 11. **Content of the study program:**

#### **Theoretical course:**

- Introduction to Microbiology;
- Morphology and structure of microorganism;
- Physiology of the microorganisms;
- Genetics of microorganisms;
- Effect of physical and chemical agents on microorganisms;
- Distribution of microorganisms and their interactions;
- Pathogenicity of microorganisms and pathogenesis of infections;
- Selected host of pathogens;
- Basic principles of microbiological diagnosis

## Practical classes:

- Purpose and method of operation of microbiological laboratories;
- Microscopic examination of micro-organisms;
- Isolation and cultivation of microorganisms;
- Examination of the biochemical activity of micro-organisms;
- Sterilization and disinfection;
- Application of serological reactions in laboratory diagnostics;
- Techniques to investigate the antimicrobial effect;
- Proper sampling, transporting and processing of samples for microbiological examination;

## 12. **Methods of studying:**

## Interactive teaching, practical course, seminars

13.	Total number of hours:			120 hours	
14.	Distribution of available	time:			
15.	Type of educational activity	15.1	Lectures course	-theoretical	30 hours teaching
		15.2	Practical clinical), seminars team wo	<b>,</b>	30 hours practical course/seminars
		16.1	Home str	udv	60 hours

17.	Assessment of knowledge:	points

	171	Tasks						
	17.1	Tests			1. Continuous tests  → Selected parts from	n theoretical micro points	min max obiology 12 - 20	
					2. Continuous test from plus theoretical second		art (first half)	
						points	18 - 30	
		Final ex	kam		Oral part	points	min max. 21 - 34	
	17.2		r work/project tation: written and participation		Seminar work	points	min. – max. 0 - 3	
	17.3	Active					min max.	
					Theoretical course	points	1 - 3	
					Practical course	points	8–10	
					Attendance at theoretic 51% - 60% = 1 point 61% - 91% = 2 points 91% - 100% = 3 points	S		
					Practical course (24 pr	actical course of	3 hours)	
18.	assessment criteria:			to 59 points		5 (five) F		
				60 to 68 points		6 (six) E		
	(points/grade)				69 to 76 points		7 (seven) D	
					77 to 84 points		8 (eight) C	
					85 to 92 points		9 (nine) B	
	~ .			_	3 to 100 points		10 (ten) A	
19.			otaining a	Condit	ional criteria for assessn	nent of knowleds	ge:	
	_		taking the		•			
	final e	xam		Knowledge assessment criteria:  1. Students need 70% from a total points (from presence of				
				theoretical and practice work) should receive approval for				
					eoretical and practice wor	<ul><li>k) should receive</li></ul>		
				the				
				the the 2. In	eir attendance (sign docum order to take the final exa	nent). nm, the student ha	approval for as to win a	
				the the 2. In mi	eir attendance (sign docum order to take the final exa inimum of 60% of the two	nent). am, the student has continual assess	approval for as to win a ment tests.	
				2. In mi	eir attendance (sign docum order to take the final exa	nent). am, the student has continual assess	approval for as to win a ment tests.	
20.	Langu	gage of th	ie course	2. In mi 3. Th 60	eir attendance (sign docum order to take the final exa inimum of 60% of the two ne minimum passing score 1% out of the total points.	nent). am, the student has continual assess	approval for as to win a ment tests.	
<u>20.</u> 21.			ne course	the the 2. In mi 3. Th 600	eir attendance (sign docum order to take the final exa inimum of 60% of the two ne minimum passing score 1% out of the total points.	nent).  nm, the student hat a continual assess to for the final example.	approval for as to win a ment tests.	
	Metho	d for eva		the the 2. In mi 3. The 60 English Anonyo	eir attendance (sign docum order to take the final exa inimum of 60% of the two ne minimum passing score 1% out of the total points.	nent).  nm, the student hat a continual assess to for the final example.	approval for as to win a ment tests.	
	Metho	od for eva	aluation of	the the 2. In mi 3. The 60 English Anonyo	eir attendance (sign docume order to take the final examinimum of 60% of the two me minimum passing score 1% out of the total points.	nent).  nm, the student hat a continual assess to for the final example.	approval for as to win a ment tests.	
21.	Metho the qu	od for evalatity of e	aluation of	the the 2. In mi 3. The 60 English Anony staff, as	eir attendance (sign docume order to take the final examinimum of 60% of the two me minimum passing score 1% out of the total points.	nent).  nm, the student hat a continual assess to for the final example.	approval for as to win a ment tests.	
21.	Metho the qu	od for evalatity of e	aluation of education	the the the 2. In mi 3. The 60 English Anonys staff, and the control of the contr	eir attendance (sign docume order to take the final examinimum of 60% of the two me minimum passing score 1% out of the total points.	nent).  nm, the student hat a continual assess to for the final example.	approval for as to win a ment tests.	
21.	Metho the qu	od for evalality of e ture: Mandat	aluation of education  ory literature Author	the the the 2. In mi 3. The 60 English Anony staff, and the correction of the correc	eir attendance (sign docume order to take the final examinimum of 60% of the two me minimum passing score 10% out of the total points.  In mous evaluation by studied associates participating	nent).  am, the student hat a continual assess to for the final example.  Idents on the substitute in the teaching.	approval for as to win a ment tests. mination is	
21.	Metho the qu	od for evaluality of ecure:  Mandat No.	aluation of education  ory literature Author	the the the 2. In mi 3. The 60 English Anony staff, and the correction of the correc	eir attendance (sign docume order to take the final examinimum of 60% of the two me minimum passing score 10% out of the total points.  In mous evaluation by studied associates participating	nent).  am, the student hat a continual assess to for the final example.  Idents on the substitute in the teaching.	approval for a sto win a ment tests. mination is oject, teaching Year 21 th ed.,	
21.	Metho the qu	od for evaluality of ecure:  Mandat No.	aluation of education  ory literature Author	the the the 2. In mi 3. The 60 English Anony staff, and the correction of the correc	eir attendance (sign docum order to take the final examinimum of 60% of the two ne minimum passing score 10% out of the total points.  I mous evaluation by studind associates participating  Title	nent).  am, the student hat a continual assess to for the final example.  Idents on the substitute in the teaching.	approval for a sto win a ment tests. mination is oject, teaching Year 21 th	
21.	Metho the qu Literat	od for evaluality of ecure:  Mandat No.	aluation of education  ory literature Author	the the the 2. In mi 3. The 60 English Anony staff, and the correction of the correc	eir attendance (sign docum order to take the final examinimum of 60% of the two ne minimum passing score 10% out of the total points.  I mous evaluation by studind associates participating  Title	nent).  am, the student hat a continual assess to for the final example.  Idents on the substitute in the teaching.	approval for a sto win a ment tests. mination is oject, teaching Year 21 th ed., 2004	
21.	Metho the qu	od for evaluality of ecure:  Mandat No.	Aduation of Education  Tory literature  Author  Jawetz E,  Il, Adelbe	the the the 2. In mi 3. The 60 English Anony staff, and the corresponding EA.	eir attendance (sign docum order to take the final examinimum of 60% of the two ne minimum passing score 1% out of the total points.  I mous evaluation by studind associates participating  Title  Medical Microbiology	nent).  am, the student hat a continual assess to for the final example.  Idents on the substitute in the teaching.	approval for a sto win a ment tests. mination is oject, teaching Year 21 th ed., 2004 17-th	
21.	Metho the qu Literat	od for evaluality of ecure:  Mandat No.	aluation of education  ory literature Author	the the the 2. In mi 3. The 60 English Anony staff, and the corresponding EA.	eir attendance (sign docum order to take the final examinimum of 60% of the two ne minimum passing score 10% out of the total points.  I mous evaluation by studind associates participating  Title	nent).  am, the student hat a continual assess to for the final example.  Idents on the substitute in the teaching.	year 21 th ed., 2004 17-th edition,	
21.	Metho the qu Literat	od for eva ality of e ture: Mandat No.	Aduation of Education  Fory literature Author Jawetz E, Il, Adelbe	the the the 2. In mi 3. The 60 English Anonys staff, and the corresponding EA.	eir attendance (sign docum order to take the final examinimum of 60% of the two ne minimum passing score 1% out of the total points.  I mous evaluation by studind associates participating  Title  Medical Microbiology	nent).  Imm, the student has a continual assess of for the final example.  Idents on the substitute in the teaching.  Publisher	year 21 th ed., 2004 17-th edition, 2006	
21.	Metho the qu Literat	od for evaluality of ecure:  Mandat No.	Aduation of Education  Tory literature Author Jawetz E, Il, Adelbe  Grinvuo	the the the 2. In mi 3. The 60 English Anony staff, and the corresponding EA.	eir attendance (sign docum order to take the final examinimum of 60% of the two ne minimum passing score 1% out of the total points.  I mous evaluation by studind associates participating  Title  Medical Microbiology	nent).  Im, the student has a continual assess of for the final example.  Idents on the subgrin the teaching.  Publisher  University "S	year 21 th ed., 2004 17-Th edition, 2006	
21.	Metho the qu Literat	od for eva ality of e ture: Mandat No.	Aduation of Education  Fory literature Author Jawetz E, Il, Adelbe	the the the 2. In mi 3. The 60 English Anony staff, and the corresponding EA.	eir attendance (sign docum order to take the final examinimum of 60% of the two ne minimum passing score 1% out of the total points.  I mous evaluation by studind associates participating  Title  Medical Microbiology	nent).  Imm, the student has a continual assess of for the final example.  Idents on the substitute in the teaching.  Publisher	year 21 th ed., 2004 17-Th edition, 2006 s.	

		3	Milena Petrovska and ass.	Pr	actical Microbio	logy	University "Ss. Cyril and Methodius" Medical faculty	5 th ed., 2010	
1.	Subjec	et			MICROBIOL	MICROBIOLOGY AND PARASITOLOGY 2			
2.	2. Code				MED-312				
3.	3. Study Program				General Medic	ine			
4.					UKIM-Faculty of Medicine Cathedra of Microbiology and Parasitology				
5.	, , , , , , , , , , , , , , , , , , ,			Integrated cycle					
6.	Study	year/sei	mester		III year / V semester	5.	Number of EKTS credits	4	
8.	Respo	nsible to	eacher		_	na Cek nducte			
9.	Precor	nditions	<b>:</b>		Completed cou	rse in	Medical Microbiolo	gy 2	

## 10. Course objectives (competencies):

## The objectives of the course enables students to acquire:

- More specific knowledge of medical important bacteria;
- Solid knowledge of important medical viruses;
- The necessary knowledge about medical important fungi;
- More specific knowledge specific knowledge of medical important parasites.

### 11. Course content:

### **Theory:**

## **Medical bacteriology**

- Classification of medical important bacteria
- Gram positive cocci• Gram negative cocci
- Gram-positive bacilli Gram negative bacilli
- Intracellular bacteria
- Spiral bacteria

## **Medical virology**

- Classification and nomenclature of viruses
- RNA viruses
- DNA viruses

## Medical mycology

- Triggers superficial mycoses
- Triggers systemic mycoses

## **Medical Parasitology**

- Medical significant protozoa
- Medical significant helminths

## **Intra-hospital infections**

#### Diagnosis of microbial infections in different systems Practical classes: • Microbiological diagnosis of infections caused by pyogenic cocci; • Microbiological diagnosis of infections involving the respiratory tract; • Microbiological diagnosis of infections involving the urogenital tract; • Microbiological diagnosis of infections involving the gastrointestinal tract; • Microbiological diagnosis of infections involving the central nervous system; • Microbiological diagnosis of intra-hospital infections; • Microbiological diagnosis of anaerobic infections; • Laboratory diagnosis of infections caused by fungi, protozoa and helminthes. 12. **Methods of studying:** Interactive teaching, practical course, seminars 13. **Total number of hours:** 150 hours 14. Distribution of available time: 15. Type of educational Lectures-theoretical 15.1 45 hours teaching activity course 15.2 Practical (laboratory, clinical), 45 hours practical seminars. course/seminars team work Home study 16.1 60 hours 17. Assessment of knowledge: points 17.1 Tests min. - max 1. Continuous tests **→** Selected parts from theoretical microbiology points 2. Continuous test from first practical part (first half) plus theoretical second part points 21 -35 Final exam min.- max. Oral part 18 - 29 points 17.2 Seminar work/project min. - max. (presentation: written and Seminar work 0 - 3points oral) Active participation 17.3 min.- max. Theoretical course 1 - 3 points 8 - 10Practical course points Attendance at theoretical course 51% - 60% = 1 point 61% - 91% = 2 points91% - 100% = 3 points Practical course (24 practical course of 3 hours) 18. Knowledge to 59 points 5 (five) F assessment criteria: from 60 to 68 points 6 (six) E (points/grade) from 69 to 76 points 7 (seven) D from 77 to 84 points 8 (eight) C from 85 to 92 points 9 (nine) B from 93 to 100 points 10 (ten) A

19.	Criteria for obtaining a signature and taking the final exam  Language of the course  Method for evaluation of			<ul> <li>Conditional criteria for assessment of knowledge:</li> <li>Knowledge assessment criteria:</li> <li>4. Students need 70% from a total points (from presence of theoretical and practice work) should receive approval for their attendance (sign document).</li> <li>5. In order to take the final exam, the student has to win a minimum of 60% of the two continual assessment tests.</li> <li>6. The minimum passing score for the final examination is 60% out of the total points.</li> </ul>						
20.	Langu	age of t	he course	English	<u> </u>					
21.						s evaluation by	stude	ents on the subjec	t. teaching	
			education	Anonymous evaluation by students on the subject, teaching staff, and associates participating in the teaching.						
22.	Literature:									
		Manda	tory literature							
		No.	Autho	r		Title		Publisher	Year	
	1 Jawetz E, Mel							21 th		
		Adelberg EA.		EA.	M	ledical Micioborl	ogy		ed.,	
									2004	
									 17-тh	
			Grinvud	D.	Μ	Medical Microbiology			edition,	
	22.1							2006		
		2	Nikola Pan	novski				University "Ss.	2011	
			and as	s.				Cyril and		
								Methodius"		
						pecial Microbiol		Medical faculty		
		3	Milena Petr		a Practical Microbiology		University "Ss.	<b>7</b> .1 1		
			and as	S.				Cyril and Methodius"	5 th ed., 2010	
								Medical faculty	2010	
1.	Subjec	et				BIOSTATIST	ICS		<b>IEDICAL</b>	
	Ů				INFORMATICS					
2.	Code				MED-215					
3.		Prograi				General medici				
4.	_	_	stitution ( Un			UKIM-Faculty			*.*	
	Institu	ite, Cha	ir, Departmer	nt)		medical inform		logy and biostatistic	cs with	
5.	Educa	tional d	egree (first or	· second						
٥.	cycle)	avnar u	egree (mst 01	scond		Integrated cycle	e			
6.	-	year/se	mester			II year / III semester	7.	Number of EKTS credits	3	
8.	Respo	nsible te	eacher			Head of departs Prof. Dr. Vesna				
								d by following men		
								logy and biostatistic	es with	
						medical inform	atics:			
						Prof. Dr. Draga	ın Dan	ilovski		
						Prof. Dr. Kristi				
						Prof. Dr. Biljan				
						Prof. Dr. Vesna				
						Prof. Dr. Rozal	inda Is	sjanovska		
-										

		Prof. Dr. Beti Zafirova Ivanovska
		Senior Research assistant prof. Dr. Irina Pavlovska
		•
9.	Preconditions for taking the subject	None

## 10. Teaching goals of the Aims of study program (competencies):

- 1. Acquiring knowledge of the basics of medical statistics, terminology, measuring units.
- 2. Acquiring theoretical and practical knowledge of analyses of statistical series through implementation of appropriate statistical methods.
- 3. Acquiring theoretical and practical knowledge of demographic and vital statistics and implementation of acquired knowledge in practice.
- 4. Acquiring theoretical and practical knowledge of the basis, concepts and application of medical informatics.

## 11. Content of the study program:

### **Theoretical course:**

- Descriptive analysis (plan of statistical research, methods of collection, grouping and presentation of data; use of relative numbers; analyses of structure of statistical mass according to numerical characteristics; method of sampling)
- Distribution of frequency and probability (estimation of parameters of samples; standard error of mean and proportion
- Hypothesis (t test)
- Analysis of variance
- Pearson  $X^2$  test
- Regression analysis and linear correlation
- Measures of correlation based on ranked data
- Non parameter tests dependant samples
- Research of dynamics of occurrences
- Analyses of survival time
- Demographic statistics
- Vital statistics
- Medical informatics

### **Practical course:**

- Relations, proportions, rates, indexes,
- Index of dynamics
- Modus and median
- Assessment of parameters of a sample
- Student t-test
- $X^2$  test
- Correlation
- Assessment of proportions of the total statistical mass based on a sample Linear trend of time series
- Season index
- Practical application of terms of demographic and vital statistics
- Medical informatics

#### 12. Methods of studying: Interactive teaching, practical course, seminars 13. **Total number of hours:** 90 hours Credits $3 \times 30$ hours for $1 \text{ credit} = 90 \cdot 90 - 100$ 45 hour teaching, practical course and seminars = 45 hours home study Distribution of available time: 14. 15. Type of educational 15.1 Lectures-theoretical 18 hours of teaching activity course

			15.2	Practical (laboratory, clinical), seminars, team work	27 hours prac	ctical/seminars			
16.	Other	types of activities	16.1	Project assignments	hours				
			16.2	Individual tasks	hours				
			16.3	Home studying	45 hours				
17.	Assess	sment of knowledge:	:			points			
	17.1	Tests		Continuous tests					
				Continuous tests of lof 2 written tests	Continuous tests of knowledge (mid-term) consist of 2 written tests				
				dynamics; arithmovariation coefficient assessment of par	om selected parts etic mean, standa ent; modus and m rameters of sample	rd deviation and edian;			
					<ul> <li>→ Problems from selected parts (student t-test</li> <li>X²- test; correlation; linear trend of time series; season index)</li> </ul>				
	Final exam			One mid-term test carries 9 – 15 points					
		rmai exam		Oral exam	points	points  min max ints 18 - 30  Ige (mid-term) consists  Steed parts (index of an, standard deviation and dus and median; of sample)  Steed parts (student t-test; ar trend of time series;  — 15 points  min max points 36 - 52  min max points 1 - 5 points 5 - 10  urse  Il course of 3 hours)  — 6 (six) E — 7 (seven) D — 8 (eight) C — 9 (nine) B — 10 (ten) A  knowledge:  Is to acquire minimum eroretical and practical  st pass the continuous total number of points in the exams session the lacontinuous tests, and			
	17.2	Seminar work/proje (presentation: writt oral)		Seminar work	points	min. – max. 0 - 3			
	17.3	Active participation	1	Theoretical course Practical course	points points	1 - 5			
				Attendance at theore 51% - 60% = 1 point 61% - 91% = 2 point 91% - 100% = 3 point	nt nts				
				Practical course (24	practical course of	of 3 hours)			
18.	Know	ledge		to 59 points					
	assess	ment criteria:	froi	n 60 to 68 points					
	(point	s/grade)		n 69 to 76 points					
				n 77 to 84 points					
				n 85 to 92 points					
1.0				93 to 100 points					
19.		ria for obtaining a cure and taking the	Cond	itional criteria for assessr	nent of knowledg	e:			
	final e	_	To obtain a signature, the student needs to acquire minimum points from attendance at seminars, theoretical and practical courses.						
	tests the o			To take the final exam, the student must pass the continuous tests or acquire a minimum of 30% of total number of points in the continuous tests, whereas during the exams session the student shall take the previously failed continuous tests, and then shall take the final exam.					
			The a	ssessment of the subject i	is established acco	ording to the			

	table of marks, based on the sum of points from all activities,

20.	Langu	age of t	he course	continu		us tests and final exam.			
21.			aluation of			hv stude	ents on the subjec	t teaching	
21.			education		nd associates partic			t, teaching	
22.	Litera				•				
		Manda	tory textbooks	}					
		No.	Autho	r	Title		Publisher	Year	
		1	James F. Jech David L. Kao J. Elmor, Do M. J. Wild	c, Joan	Epidemiolog biostatistics a preventive med	and	Tabernakul	2010	
	22.1	2	Danilovski D Orovcanec N Vasilevska K Taushanova Velic Stefan V., Isjanovsk Zafirova Ivar B., Zdravkov M., Pavlovsk	L., B., Povska Ta R., Povska	Practical teachi Biostatistic		University "Ss. Cyril and Methodius" Medical faculty	2012	
		3	Danilovski D Orovcanec N Vasilevska K Taushanova Velic Stefan V., Isjanovsk Zafirova Ivar B., Zdravkov M., Pavlovsk	I., B., ovska ta R., novska	Biostatistic	·s	University "Ss. Cyril and Methodius" Medical faculty	2012	
1.	Subjec	et	1	1	<b>EPIDEMIO</b>	LOGY			
2.	Code				MED-322				
3.	Study Program			General Med	icine				
4.	Organizing Institution ( Unit, Institute, Chair, Department)			UKIM-Facult Cathedra of e medical infor	pidemio	dicine logy and biostatisti	cs with		
5.	Educa cycle)	tional d	egree (first or	second	Integrated cyc	cle			
6.	Study	year/se	mester		III year / VI semester	7.	Number of EKTS credits	5	

8.	Responsible teacher	Head of department/cathedra Prof. Dr. Vesna Velic Stefanovska  Teaching is conducted by following members of the Cathedra of epidemiology and biostatistics with medical informatics:  Prof. Dr. Dragan Danilovski Prof. Dr. Kristin Vasilevska Prof. Dr. Biljana Tausanova Prof. Dr. Vesna Velic Stefanovska Prof. Dr. Rozalinda Isjanovska Prof. Dr. Beti Zafirova Ivanovska Senior Research assistant prof. Dr. Irina Pavlovska
9.	Preconditions:	First part of professional exam passed

_	
	Exam of Biostatistics with medical informatics
	passed (III semester)
10.	Teaching goals of the study program (competencies):
	<ul> <li>Acquiring of theoretical and practical knowledge from the area of epidemiology which would enable recognition and resolution of epidemiological problems and challenges as well as their prevention.</li> <li>Acquiring of skills which will use mortality and morbidity indicators to analyze conditions with specific diseases or groups of diseases, including the ethyology factors for their</li> </ul>
	<ul> <li>Recognition of the role and meaning of the levels of prevention and their application in practice.</li> </ul>
	• Acquiring knowledge of the epidemiological methods and their implementation in the scientific research.
	<ul> <li>Acquiring of knowledge of epidemiology of infectious and noninfectious diseases and conditions.</li> </ul>

#### 11. **Content of the study program:**

#### **Theoretical course:**

- Basis of epidemiology introduction, goals, history, contemporary epidemiology;
- Epidemiology methods
- Indicators of diseases, deterioration of health, and death rate;
- Epidemiological process and epidemiological models
- Occurrence of infection, and infectious diseases
- Measures of prevention and eradication of diseases
- Epidemiological oversight
- Immunization, seroprophylaxis, and immunoprophylaxis
- Elimination and eradication of infectious diseases
- Desinfection, desinsection and deratisation
- · Health education
- Intrahospital infections
- Epidemiological doctrine of military conflict and state of emergency
- Epidemiological characteristics of intestinal, respiratory, contact, and transmissive infectious diseases
- Epidemiological characteristics of zoonosis and helmintosis
- Epidemiological characteristics of chronic noninfectious diseases and health deterioration.

### **Practical Course:**

- Application of epidemiological methods in practice
- Processing of samples from various types of epidemics resolving of an invented case of
- Acquainting with books of rules, and laws from the area of epidemiology Mastering the acquired theoretical knowledge

#### 12. **Methods of studying:**

Interactive teaching, practical course, seminars

		6/ I		,			
13.	Total	number of hours:		150 hours Credits 5 x 30 hours for 1 credit = 150 15			
						hing, practical c	course and
					seminars = 75	5 home study	
14.	Distri	bution of available	e time:				
15.	Type	of educational	15.1	Lectures	-theoretical	40 have 4	la i
	activity			course		40 hours teaching	
			15.2	Practical (laboratory,			
				clinical),		35 hours pra	ctical
				seminars		course/semir	
				team wo	,		
			16.1	Home st		75 hours	
17.	Asses	sment of knowledg	ge:	1			points
	17.1						
	17.1	Tests					min max
				Conti	nuous tests	points	18 - 30

	Continuous tests of knowledge (mid-term) consists of 2 written tests
	Continuous tests relate to:  + Selected parts from general epidemiology  + Selected parts from special epidemiology
	One mid-term test carries 9 – 15 points
Final exam	мин
	макс. Oral part points 36 - 52

	17.2 Seminar work/project (presentation: written				Seminar worl	k	points	min. – max. 0 - 5	
		oral)	Acceptant William	ii uiio	Semmer work		pomes	o z	
	17.3 Active participation				Theoretical cou		points points	min max. 1 - 3 5 - 10	
					Attendance at theoretical course $51\% - 60\% = 1 \text{ point}$ $61\% - 91\% = 2 \text{ points}$ $91\% - 100\% = 3 \text{ points}$				
					Drastical cove	maa (24 mma	atical course of	2 hours)	
18.	Know	ladga			to 59 points	rse (24 pra	actical course of	5 flours) 5 (five) F	
10.		neuge ment cri	iteria:	from 6	0 to 68 points			6 (six) E	
		s/grade)			9 to 76 points			7 (seven) D	
	, i	υ,			7 to 84 points			8 (eight) C	
					5 to 92 points			9 (nine) B	
					to 100 points			10 (ten) A	
19.	Criter	ia for o	btaining a			r assessm	nent of knowled	` ,	
	Criteria for obtaining a signature and taking the final exam			points fro courses.  To take t tests or a the contistudent s then shall.  The assectable of response to the continuous co	To obtain a signature, the student needs to acquire minimum points from attendance at seminars, theoretical and practical courses.  To take the final exam, the student must pass the continuous tests or acquire a minimum of 30% of total number of points in the continuous tests, whereas during the exams session the student shall take the previously failed continuous tests, and then shall take the final exam.  The assessment of the subject is established according to the table of marks, based on the sum of points from all activities, continuous tests and final exam.				
20.	Langu	age of t	he course	Macedor	nian				
21.	Metho	d for ev	aluation of	•	Anonymous evaluation by students on the subject, teaching				
			education	staff, and	staff, and associates participating in the teaching.				
22.	Literat	1	. 10						
		<b> </b>	tory literature		TP*	1.	D1.1: -1	V	
		No.		thor	Tit. Epidem		Publisher	Year	
	1 James F. Jech L. Kac, Joan Dorothea M.			n J. Elmor,	biostatis preve medi	tics and ntive	Tabernakul	2010	
		2	Danilovski Orovcanec Vasilevska Taushanova Stefanovska	N., K., B., Velic			University "Ss Cyril and Methodius" Medical facult		
			Isjanovska I Ivanovska I Zdravkovsk Pavlovska I	3., a M.,	Gene Epidem				

3	Danilovski D., Orovcanec N., Vasilevska K., Taushanova B., Velic Stefanovska V., Isjanovska R., Zafirova Ivanovska B., Zdravkovska M., Pavlovska I.;  University "Ss. Cyril and Methodius" Medical faculty						
Subject:	ANAESTHESIOLOGY WITH REANIMATION						
Study Program:	General Medicine						
Code:	MED 513						
Academic Year:	Fifth (V)						
Semester:	Ninth (IX)						
Total no. of hours:	60						
Credits:	2						
Type of the Subject:	Mandatory						
Preconditions:	Fulfilled condition for the VII semester						
Conducted by:	Department of Anaesthesiology with reanimation						
Responsible	Prof. Mirjana Shosholcheva, PhD, MD						
teacher:	IZABIL V. I I						
Address:	KARIL, Vodnjanska 17, Skopje e- mail: sosolceva@hotmail.com						
Key words:	General medicine studies, mandatory subject, Anaesthesiology with						
Aims of the study:	reanimation The student has to acquire:						
	<ul> <li>Basic knowledge of anaestesiology (types of anaesthesy and the impact the anaesthetics have on the human body, anaesthesiology check-up, anaesthesy preparation, peroral monitoring and peroral administration of patient with anaesthesy, general and local anaesthetics, opiates, muscle reluctant, post anaesthesiology healing, types of anaesthesiology complications and their salvation)</li> <li>Resuscitation as science and its practical appliance in the doctors practice, (elements of basic and progressive keeping in life and ways of manipulation at resuscitation, resuscitation at accidental conditions (electric shock, anaphilaxa, drowning, trauma etc.))</li> <li>Basis of intensive care (urgent procedures at unconsciousness patients, acute respiratory weakness, electrolyte misbalance, and clinical manifestation of the different types of shocks and their therapy)</li> <li>Basic knowledge of healing acute chronic pain To be capable of:</li> <li>Reanimation, basic and progressive</li> <li>Oxigenotherapy</li> <li>Resuscitation of the circulation volume</li> <li>Artificial alimentation</li> <li>Transport of critical patient</li> </ul>						
	<ul> <li>Theoretical course: 20 hours Anesthesiology:</li> <li>Introduction to the subject</li> <li>Pre-Anesthesiology checkup of patient for Anesthesia/operation</li> <li>Types of anesthesia, medications in anesthesia</li> <li>Surveillance and monitoring of patient (basic and progressive)</li> <li>Patients care in post-operation period</li> </ul>						

#### **Brief content:** Reanimation: SBMO, cardiopulmonary reanimation (SBO)-ABC, basic keeping in life, DEF, medicaments treatment of KA, (EKG manifestations at KAdefibrilation) Reanimation of accidental conditions: drowning, deathly electric strike. Cerebral death, Artificial ventilation Definition and types of shock-clinics and therapy Pre-hospital treatment with infusion, plasma, blood and blood derivates transfusion, (bleeding and water-salted disbalance at adults and children) First reanimation, at consciousness patient with unknown nature, reanimation of acute respiratory weakness, acute neuromuscular weakness, status epilepticus, status asthmaticus; Practical course: 18 hours Anaesthesiology check-up (classification according to ASA); Anaesthesiology apparatus practice-surgery Regional anesthesia-practice Phantom practice-artificial respiration, heart massage Medicaments application, practice (im, iv and infusion therapy) Practice in intensive care unit-critical patient, reanimation of patient with shock, patient intubing-practice on a model Practical use of defibrillator Blood transfusion Organization: Theoretical course: 20 hours Seminars: 2 hours Practical course:18 hours Home learning 20 hours Methods of Interactive teaching, seminars, practical trainings studying: Knowledge and understanding: The student will acquire knowledge on types of anesthesia, medications in anesthesia, per-oral monitoring, postanesthesia period care, types of shock and therapy, reanimation Key skills: The student will be able to apply modern therapy in treatment of **Anticipated** acute and chronic pain, basic pre-operation treatment and preparation of results: patient before anesthesia, infiltrative anesthesia, resuscitation protocols for OOZ and NOZ application, reanimation and urgent procedures for hosting critical patients, polytraumatic and other patients in urgent condition. The student is obliged to participate actively in all anticipated activities including continuous assessment in order to gain a signature. Points for the activities of the student: Specific recommendations Type of activity **Points** for the course: Min. Max. Theoretical course\* 1 5 2 4 Seminars 12 16 Practical course\*\* Continual assessment (one) 21 35 Final exam-oral 24 40 Total: 60 100

\*theoretical course presence:

51%-60% - 1 points;

61%-70% - 2 points;

71%-80% - 3 points;

81%-90% - 4 points; 91%-100%

- 5 points.

\*\*practical course (4 groups of practical training lasting for 4 hours)

Presence: 2 points

The grade for the whole exam is obtained by counting the points obtained from all the anticipated activities (lectures, practice, seminars, colloquies, final exams)

	Continual assessment of knowledge colloquies – 1 written test
Assessment of knowledge	
	Anaesthesiology, reanimation patient's shock and therapy     21-35 points
	Final exam: practical + oral examination
	Practical examination: (according to skills catalogue) + integrative oral part – the integrative knowledge necessary to understand the core of the subject is examined  24-40 points
	(for 10=38-40 points, for 9=35-37 points, for 8=31-34 points, for 7=28-30 points for 6=24-27 points)
	The student has to gain minimum 49% of the anticipated points for each part of
	the exam in order to obtain the points for the final exam. On the contrary, the exam is considered not passed.
	Complete final exam: is a combination of the failed colloquies and final exam.
	The student is obliged to pass the failed colloquies first, and then to pass the
	final exam. In case student does not pass the failed exam, he does not have right to take the final exam.
Textbooks:	<ul> <li>Edvard Morgan, Madzid Mikail, Majkl Marej Clinical Anesthesiology, Magor, Proect of the Government of R.M. (translated books) 2011</li> <li>Marija Soljakova and coauthors Anesthesiology and reanimation, Biographica 2007</li> </ul>
	<ul> <li>Mirjana Shosholcheva, Neuromuscular block, Medical faculty, UKIM, 2012</li> </ul>
	<ul> <li>Mirjana Shosholcheva, Physic for anesthesiologists, Medical Faculty, UKIM, 2014</li> </ul>
	<ul> <li>Zorka – Nikolova Todorova, Biljana Kuzmanovska, Albert leshi Mechanical ventilation, Prosvetno delo, 2011</li> </ul>
	<ul> <li>Biljana Shirgovska, Hypotensive anesthesia, Medical faculty, 201</li> <li>Andonov V., - Heart and pulmonary reanimation</li> </ul>

bio

1.	Title of the subject	PEDIATRICS-CLINICAL PRACTICE					
2.	Code	MED- 613					
3.	Study program	General Medicine					
4.	Organizer of the study program (unit, institute, division, department)	Ss. Cyril and Methodius University of Skopje- Medical faculty Division of General Pediatrics					
5.	Level of education (first or second cycle)	Integrated cycle					
6.	Academic year/semester	sixth(XI or XII Semester)  7. Number of 6 EKTS credit points					
8.	Teacher	Chairman of the Pediatrics Division Prof. Dr. Kata Martinova *The classes are conducted by all the members of the Pediatrics division					

9.	Enrollment requirements	Credit points gained(passed exam) in Pediatrics
10.	Objectives of the program: Familiarization with the diagnostic clinical pediatrics	e and therapeutic procedures in the field of

# 11. **Contents of the program :**

- 1. Admission of a sick child in the hospital
- 2. Particularities in the taking of the patient's medical history according to the department
- 3. Particularities of the physical exam according to the department :
  - Hematology
  - Oncology
  - Cardiology
  - Endocrinology
  - Pulmology
  - Immunology
  - Gastroenterology
  - Neurology
  - Metabolism
  - Neonatology
  - Nephrology
  - Intensive care
- 4. Creating of algorithms for diagnostic procedures, work diagnosis and therapy plan in various clinical cases
- 5. Participation in the clinical work at the department
  - urine analyses
  - complete blood count and blood smear
  - pre-transfuzion testing with a legal documentation
  - insertion of a urine catheter
  - ECG (technique and analyses)
  - cardio-pulmonay resuscitation
  - interpretation of a chest x-ray
  - injections (subcutaneus, intramuscular, intravenous)
- 6. To attend and to participate in the following procedures:
  - Blood and bone marrow smear
  - pleural puncture
  - abdominal puncture
  - insertion of a gastric tube and gastric lavage
  - insertion of central venous catheter
  - measurement of central venous pressure
  - continuous measurement of blood glucose
  - continuous measurement of blood pressure (Holter)
  - Measurement of blood glucose with glucometer
  - gastroscopy, endotracheal intubation
  - artificial ventilation
  - peritoneal dialysis

The clinical practice will be held over three working weeks, with full time working hours (eight hours a day). Four cycles will be held during the XI and XII semester. Cycle rotations between the wards are organized and the mentors will shift. The student's everyday activities will be noted in a designated "activity diary", which will be verified by the mentors signature. 12. **Learning methods:** Participation in the grand rounds of the Clinic Participation in the everyday work of the Pediatric departments Participation in the procedures form the field of pediatrics 180 hours 13. Total available amount of hours 14. Distribution of the available hours 120 hours of exercises 60 hours of home learning 15. Types of educational 15.1 Exercises(laboratory, 120 hours activities clinical), seminars, team work 16. Other forms of activities 16.1 Home learning 60 hours 17. Method of evaluation бодови The student is obliged to attend and actively participate in the clinical practice 17.1 during three weeks, 15 working days for hours Clinical practice score-attendance 33 points, participation (skills) 34 points 18. Criteria for evaluation The student must achieve a minimum score of 60 points (points/score) The scoring is descriptive (passed). 19. Criteria for completing Conditional criteria: the seminar and obtaining To obtain the right to a final exam and score the minimum the right to a final exam amount of points necessary for passing of the pediatrics exam, the student is obliged to attend the clinical practice and must master all the skills and activities which are planned in the subject program 20. Language on which the Macedonian education is conducted Anonymous evaluation by the students of the subject, the 21. Methods for evaluating the quality of the teachers and the collaborators who participate in the education education 22. Literature Mandatory literature Author Title Publisher No Year R. Kliegman, Nelson Textbook of Elsevier 2011 1 Pediatrics, 19th Health Stanton, J. St. Sciences edition Geme, N. Schor, 22.1 R. Behrman 2003 Dushko **Pediatrics** School book, Zagreb Mardeshich T.Lissauer. Illustrated Texbook Mosby Elsevier 2011 G. Clayden of Pediatrics

	3	Kuzmanovska D. Grujovska S.	Physical Diagnosis in Pediatrics	Medical Faculty, USCM	2011
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		Additi	ional literature					
		No	Author		Title		Publisher	Year
	22.2	1	Mary Rudolph,Tim Lee, Malcolm Leven	Pediatrics and Children's health (translation)			Ars Lamina- Skopje (A project of the GOM)	2012
1.	Title o	of the su	ıbject		PEDIATRIC	S		
2.	Code				MED- 511			
3.	Study	prograi	m		General Medi	cine		
4.	_	Organizer of the study program (unit, institute, division, department)			Ss. Cyril and Methodius University of Skopje- Medical faculty Division of General Pediatrics			
5.		Level of education (first or second cycle)			Integrated cycle			
6.	Acade	emic yea	ar/semester		fifth/IX fifth/X	7.	Number of EKTS credit points	11
8.	Teacher				Chairman of the Pediatrics Division Prof. Dr. Kata Martinova *The classes are conducted by all the members of the Pediatrics division			members
9.	Enrollment requirements				The first part of the professional exam should be passed The criteria for enrollment in the VII semester should be met			
10	01.	4	C 41 (		•) -			

# 10. **Objectives of the program (competencies):**

- 1. The students should gain basic knowledge, which will be applied in a clinical setting in order to handle normal and abnormal growth and development (physical, physiological, psycho-social) of the children from birth to adolescence.
- 2. The student should be able to provide basic pediatric care to children from different age groups (neonates, infants, toddlers, children and adolescents).
- 3. The students should gain the appropriate skills and knowledge necessary for the proper handling of the most common and important diseases and urgencies in Pediatrics
- 4. The students should gain knowledge for professional conduct and communicational abilities necessary for problem-solving (problem solving skills).
- 5. The students should be equipped for life-long learning, necessary for their further professional development

# 11. **Contents of the program:**

# **Theoretical training:**

# 1. Social and preventive pediatrics

Social-economical factors that influence children's health. Vital statistics for the children's health in R. of Macedonia. Organization of the health-care system, National preventive programs, mandatory immunizations 2. **Growth and development** 

Normal growth and growth charts, abnormalities of the growth and development. Evaluation of various developmental milestones and discovering of developmental abnormalities.

# 3. Care for the sick child

Primary and hospital care for the children. Ethics. Basics of evidence based medicine.

# 4. Pediatric emergencies/ accidents/ poisonings

Principles of emergency pediatrics: respiratory, cardiovascular, neurologic and metabolic emergencies, poisonings and serious trauma

# 5. Genetics and dysmorphology

Chromosome disorders, monogenic disorders, multifactorial inheritance and dysmorphism

# 6. Perinatology/ Neonatology

A normal newborn, neonatal resuscitation, growth of the newborn, neonatal seizures, respiratory disturbances, jaundice, metabolic disorders, hematologic disorders, infections, birth trauma and urgent surgical conditions.

# 7. Growth and puberty

Disorders of the pubertal development

#### 8. Nutrition

Nutritional needs, breastfeeding, formula feeding, nutritional disorders

# 9. Nephrology

Nephrotic syndrome, glomerulonephritis, urinary tract infection, renal failure, enuresis, hypertension

# 10. Cardiology

Rheumatic fever, Congenital heart diseases, heart failure, infective endocarditis, arithmias

#### 11. Respiratory system

Upper and lower respiratory tract diseases, bronchial asthma, chronic pulmonary diseases, cystic fibrosis

# 12. Infections/ Allergies/Immunity

Conditions accompanied by fever, Specific infections, anaphylactic reactions, urticaria (hives), allergies, immunizations, immunodeficiency disorders

#### 13. Endocrinology

Diabetes mellitus, hypoglycemia, hypothyreoidism, hyperthyreoidism, disorders of the parathyreoid glands, adrenal cortical insufficiency, Cushing's syndrome

## 14. Metabolism

Inborn errors of the metabolism, neonatal screening, gastroenteritis, dehydration and re-hydration, acid-base balance (interpretation and disorders)

# 15. Neurology

Mental retardation, CNS infections, cerebral palsy, hydrocephalus, microcephaly, neuromuscular disorders

## 16. Gastroenterology/ Hepatology

Abdominal pain, abdominal mass, malabsorbtion, inflammatory bowel diseases, liver diseases, cirrhosis and portal hypertension, hepato-splenomegaly.

# 17. Hematology/Oncology

Anaemias, hemorrhagic syndrome, the most common malignancies in children 18.

#### **Behavioral pediatrics**

Behavioral and social problems in childhood, ethic and professional behaviors relevant for the pediatricians

#### 19. Rheumatology

	Evaluation of the musculo-skeletal system, variations of the normal posture, diseases of the hip, knee and foot, diseases of the spine, back and neck, arthritis  20. Skin  Rash in the neonatal/infant period, infections and infestations, rash during systemic diseases  21. Adolescent medicine  Communication with adolescents, common health problems Practical teaching:  Mastering of clinical skills and the practical implementation of the acquired theoretical knowledge									
12.	interac proble exerci	Methods of studying: interactive lectures, clinical exercises and exercises in primary health-care, problemoriented clinical scenarios, practicing of skills on mannequins, a project exercise, problem oriented seminars (case based)  Total available amount of hours  320 hours								
13.		available amount of			330 hours					
14.	Distril	oution of the availab	ole hour	·s	180 hours of lectures, exercises and seminars 150 hours of home learning					
15.	Types activit	of educational ies	15.1	Exercise	es(laboratory, , seminars,	90 hours Seminars 26 hours				
16.	Other	forms of activities	16.1	Stand-a assignm	ents	hours hours				
17.	Metho	od of evaluation sco	16.3	Home lo	earning	150 hours				
17.	17.1	Test	ге рош	*Conto	minmax. Continuous evaluation * 3: score points 3:  *Continuous control of the gained knowledge (colloquiums): 3 written tests (multiple choice All the fields in Pediatrics are covered: Colloquium 1: neonatolgy, nutrition, genetic immunology, pulmology, 10-17 score points Colloquium 2: endocrinology, emergency pediatrics, metabolic diseases/disorders, nephrology, gastroenterology, 10-17 score proceedings and the colloquium 3: hemato-oncology, neurology cardiology, 10-17 score points					

		Final exam		of the patien diagnosis, pl catalog of sk	tegrative exam consists of: Taking tr's medical history, differential hysical exam, skill according to the kills + an integrated oral exam tegrated knowledge		
				the subject a . The exam and one virt minmax.20 10=30-33 sc	r the understanding of the plenum of and the medical practice is evaluated is conducted on one real patient tual case (practical and oral part) 0-33 score points ore points, 9=27-29 score points, ore points, 7=21-23 score points, 6= points		
	17.2	Seminar assignment/project (presentation : writ oral)		min max. Seminars*p	points30 - 40		
	17.3	Active participation	n	minmax Theoretical teachers	teaching score points2 - 6 ching score points 8 - 10		
18.	Criteri	a for evaluation	from59	score points	5 (five) F		
	(points	s/score)	from 60	0 to 68 score points	6 (six) E		
			from 69	9 to 76 score points	7 (seven) D		
			from 7	7 to 84 score points	8 (eight) C		
			from 85	5 to 92 score points	9 (nine) B		
			from 93 to 100 score points		10 (ten) A		
19.	the ser	a for completing minar and obtaining ht to a final exam	Conditional criteria: To complete the seminar the student is obliged to attend and take active participation in the seminars, also to achieve the necessary score minimum  To obtain the right to a final exam the student is obliged to pass the planed continuous evaluations or to score a 30% minimum of the total amount of points, wherein				
				during the exam session first he must pass the continuous evaluations he hasn't passed and then go to a final exam			
			scores, v	re for the subject is formed according a table of which on the other hand is formed according to the the score points from all the activities, continuous ions and the final exam			
20.	_	age on which the	Macedo				

21.		ality of	evaluating the		rs and			dents of the sub o participate in		the	
22.	Litera	ture									
		Manda	atory literatu	re							
	22.1	No	Au	thor		Title		Publisher		Ye ar	
		1	R. Kliegm Stanton, J. N. Schor, I	St. Gem		Nelson Textbook of Pediatrics, 19th edition		Elsevier Health Sciences		20 11	
		2	Dushko Mardeshich			Pediatrics		School book, Zagreb		20 03	
			T.Lissauer, G. Clayden			Illustrated Texbook of Pediatrics		Mosby Elsevi	er	20 11	
	3 Kuzmanovska D Grujovska S.					Physical Diagnosis in Pediatrics		Medical Faculty, USCM		20 11	
	Additional literature						1		-4		
		No	Autho	or		Title		Publisher	Y	<i>l</i> ear	
	22.2 1 Mary Rudolph,Tim Lee, Malcolm Leven			Pediatrics and Children's health (translation)		Sko	Lamina- opje (A project he GOM)	20	12		
1.	Subje	ct			]	FIRST AID					
2.	Code				]	MED-127					
3.	Study	Progra	ım		(	General Medicine					
4.	_	_	nstitution (			UKIM-Faculty of Medicine  Department of general surgery					
5.			air, Departn degree (first			Department of general surgery Integrated cycle					
6.		year /s	emester			First (I) Year, second (II) semester		Number of credits	1		
8.	Responsible teacher					Chief of department of surgery -  Doc.dr. Boro Dzonov   Chief of department of anaesthesiology - Prof. d-r Mirjana Sosolceva					
9.	Preco	ndition	s:			<mark>Prof. d-r Sask</mark> None	TO JUNCI	<i>,</i>			
10.	Preconditions:  Teaching goals of the study program  Introducing the basics of  Students are introduced vunconscious situations, bleeding,					(competencies rst aid and life s th the principles roken bones, bu	support s and skil	ls of first aid in	s wel	ll as	
		the sys	tem of moder	n triage i	n mas	s disasters •					

# 11. Contents of the study program: Theoretical

#### courses:

# First cycle

- What is first aid: introduction, meaning and methods
- Reasons that lead to the need of providing first aid and assessment of the situation: awareness, breathing, circulation, injuries
- Basics of cardiac pulmonary resuscitation
- Reanimation
- Life support
- Asphyxia and other conditions of impaired breathing
- Poisoning
- Other types of emergency situations
- Aches

# Second cycle

- Wounds and bleeding
- Fractures
- Injuries on the muscle and joint surfaces
- Burns
- Bandaging and bandages
- Effects of low and high temperatures
- Procedures for major incidents organization
- · Blackouts.
- 12. **Methods of studying:** Classes will be held in the form of a two-day intensive course. The first day will be taught theoretical classes and practical exercises in groups on reanimation phantom (3 class's theory and 4 classes' practical exercises). The second day will be taught theoretical and practical exercises in surgery (taking care of wounds, wounds, fractures and set.) (3 class's theory and 4 classes practical exercises).

Discussion and consultation whit teachers.

13.	Total no. of hours:			30		
14.	Distribution of the avai	ilable tir	ne	15 classes theory, practical exercises		
				15 hours home studying		
15.	Type of educational activity			s-theoretical and practical	7 classes	
		15.2	Practice	, seminars	Practice,8 classes	
16.	Other types of	16.1	Project a	assignments	hours	
	activities	16.2	Individual tasks		hours	
		16.3	Home st	tudying	15 hours	
1						

# 17. **Assessment of knowledge:**

17.1	Tests		minмах.
		Continuous tests	points 60 - 100
		periodic evaluation of kn	owledge:
		2 - written test	min – max
		1. Reanimation	30 - 50
		2. Surgery	30 - 50

		Final e	exam	If the student did not win a minimum score on one or both continuous controls, the student needs to approach the final exam which represents one or two continuous checks that are not passed						n the final
	17.2			max. Se	mir	nar works			min	
	17.3	Active								
18.	Know	partici ledge as		1	ın to	59 points				5 (five) F
10.	Knowledge assessment				·P··	o o o points				3 (11/6) 1
	criteri					o 68 points				6 (six) E
	(points/grade)					76 points				(seven) D
						84 points				(eight) C
	_					92 points 100 points				9 (nine) B 10 (ten) A
19.	Criteria for obtaining a signature and taking the final exam			To get theoret	Conditional criteria for assessment of knowledge: To get a signature the student is required to attend the theoretical, practical training and seminars and to gain minimum scores					
				the tab	The assessment of the subject is formed according to the table of estimates, based on the sum of points from all activities, continuous inspections.					
20.			he course	Englis		. 1 .9			C.1 1:	. 1
21.			valuation of education						n of the subject, e educational act	
22.	Litera		caucation	and co	nac	orators inve	ived i	iii tii	e educational act	AVILIOS
		Manda	ntory textboo	ks						
		Р.бр	Авто	1				Издавач	Година	
	22.1	1	Stephen R. Hayden Richard Wo Roger M. F Peter Roser	olfe Barkin	5 em	sen and ba m nergency edicine cons	inute		abernakul - kopje	2011
		2	Members o department involved in teaching	its		thorized lec	tures			
1.	Subje	ect				HEALTH	PRO	MO	OTION	<u> </u>
2.	Code					MED-125				
3.		Progra		T 1 *4		General mo			adiain-	
4.	_	_	nstitution ( <sup>*</sup> air, Departn	,		UKIM-Fac	_		edicine Il Medicine	
5.			degree (first		nd	Integrated		J-14	1,100101110	
6.	cycle)		emester			First/II	7	•	Number of	1
									credits	

8.	Teacher	Head of Department: Prof. Dr. Fimka Tozija						
		Responsible teacher: Prof. Dr. Elena						
		Kjosevska						
		*Teaching is conducted by all teachers of the						
		Department of Social Medicine						
9.	Prerequisites for enrolling the	A signature for the subject Introduction to						
	course:	Medicine						
10.	Teaching goals of the study progra	am (competencies):						
	Introduction to the basic values of health							
	<ul> <li>Preparing for the independent</li> </ul>	Preparing for the independent performance with educational purposes						
	<ul> <li>Promote health to target group</li> </ul>	o at all the levels of health care						

# 11. Contents of the study program: Theoretical course::

- Behavior and health education Definition of health education and health culture
- Objectives and to whom the health education is intended
- Health promotion and health education
- Motivation for learning health promotion
- Forms, methodology and tools in work in the field of health promotion
- Health promotion principles
- Health promotion methods
- Health promotion tools
- Areas of work in health promotion
- Planning and organization of health promotion
- Methodology of preparation and implementation of the health promotion program in the community
- Practicing health promotion in the Republic Macedonia

12.	Meth	ods of studying: In	teractive	e lectures	, exercises, sei	minar work	
13.	Total	available time:			30 hours		
14.	Distri	bution of the avail	able tir	le time 15 hours lectures, exercises 15 hours home studying			
15.		The forms of educational activity		Lecture	s-theoretical	10 hours	
			15.2	Exercises seminars, team work		5 hours	
16.	Other	types of	16.1	Project	assignments	Hours	
	activi	ties	16.2	Individual tasks		Hours	
			16.3	Home s	tudying	15 hours	
17.	Asses	sment of knowledg	e:point	S			
	17.1	Tests	Cont writt It co	tinuous as en test vers the f	irst half of all	minmax. points 18-30 nowledge (Colloquium): 1 areas of the content of the ning program for the subject	

Health promotion, which is divided into two equal parts.

	Final exam			min-max. Oral
		part *	points	30-50
		* Oral part (integrative) - knowledge, which is impowhole subject. (for grade: 10 = 47-50 popoints; 7 = 35-38 points;	ortant for under ints; $9 = 43-46$	erstanding the $6$ points, $8 = 39-42$
17.2	Seminar work/project (presentation: written and oral)	Seminar work	points	minmax. 6-10
17.3	Active participation	Theoretical course* course** poir	points nts 3-5	minmax. 3-5 Practical
		*Attendance of theoretica 61-74%=3 points 75-90%=4 points	al course:	

1.	Title of the subject	PEDIATRICS-SEMINAR
2.	Code	MED- 614

				91-10	0%=5 points						
				1 bloc	ek=3 points	blocks	of exercises 5 hours	in total)			
1.0	Vnovy	ladaa a	saasamant	2 0100	2 blocks=5 points up to 59points 5 (five)						
18.	criteri		ssessment	1 1							
		u. ts/grade	)		60 to 68points		7	$\frac{6 \text{ (six) E}}{\text{E}}$			
	(poin	is/grade	_		69 to 76points			(seven) D			
					7 to 84points			(eight) C			
					5 to 92points			(nine) B			
1.0	~ .				3 to 100points			0 (ten) A			
19.			otaining a				essment of knowled	_			
			taking the	_	•		it is required to atter				
	final e	xam			_	raining	and seminars and to	achieve			
					um points.		. 1 . 1 11	.•			
							ne student should pa				
				-			nent and to achieve a				
						_	oints for this assessi				
					•		first takes the unpa				
				continuous checks, and then comes to the final exam. The							
				grade from the assessment of the subject is formed in							
				accordance with the table of grades, based on the sum of points from all activities, continuous checks and final							
					examination.						
20.	Longu	ogo of t	the course	Englis							
21.			valuation of			evalua	tion of the subject, t	eachers			
21.			education				the educational act				
22.	Litera		<u> </u>								
22.	Zitera		atory textbool	ks							
		TVIGITOR	Autho								
		1	Seturaman I		Communication	n	Tabernakul	2010			
		_			skills in clinica		1 do official of	2010			
					practice						
		2	D.Donev,		Social medicine	e	Faculty of	2013			
			M.Spasovsk	ci.			Medicine				
			F.Tozija,	,			In print				
	22.1		E. Kjosevsk	a			1				
		3	D.Donev,		Health prom	notion	Faculty of	2013			
			L.Mirchevsl	ka,	and health		Medicine				
			V.Stojanovs	ska,	education		In print				
			E. Kjosevsk				•				
			Z.Velkovsk	i.							
			I.Gligorov,								
			E.Rizova								
		Additi	onal literatur		m:/1		D1.1' 1	V			
	22.2		Autho	r	Title	•	Publisher	Year			
	22.2	1	Donev D.,	C	Health promoti	ion	Hans Jacobs	2007			
			Pavlekovic		and disease		Publishing				
			Zaletel Krag	gelj L prevention			Company	1			

3.	Study programe		Ge	neral Medic	ine			
4.	Organizer of the study pr	ogram				ius University o	f Skonie-	
7.	(unit, institute, division, d			Ss. Cyril and Methodius University of Skopje- Medical faculty				
	(unit, motitute, division, d	cpur un		vision of Ger		Pediatrics		
5.	Level of eduction (first or cycle)	second	-	egrated cycl				
6.	Academic year/semester			sixth (XI or	7. Nu	mber of	1	
	-			XII El		credit		
			sen	nester)		points		
8.	Teacher					atrics Division		
				f. Dr. Kata				
						ducted by all the	members	
	T 11			he Pediatric				
9.	Enrollment requirements					from the exam in		
					from t	he clinical practi	ce in	
10	Objectives of the			liatrics				
10.	Objectives of the			hlam hagad	in the	midst of a seco		
	During the semina presentation, the						the	
	opportunity to bec	-						
	casuistry	ome m	iiiiiiai izea	with the or	ouder	spectrum of Fed	atric	
11.	Contents of the program	n:						
	Theoretical process		cases fro	m various pe	ediatri	c topics		
	Problem-solving of	_		-		-		
	<ul> <li>Case presentation</li> </ul>							
	The classes will be held o		days, fo	r four hours	each.	Four cycles will	be held	
	during the XI and XII sen	nester						
12.	Methods of learning:							
				y the profes				
			ly partici	pates in the	discus	sion and in the p	ublic case	
	presentatio				of	20 atradanta an a		
			•		-	20 students on a experts, will part	cinata in	
	-	•		_	with	experts, will parti	cipate iii	
	"for or aga	-	_		hlam a	solving will be co	nducted	
13.	Total available amount of		or cuucati	30 hours	oiciii S	orving will be co	muucteu	
14.	Distribution of the availab		·s	20 hours o	f semi	nars		
- ''			-	10 hours o				
15.	Types of educational	15.1	lectures-	theoretical		6		
	activities		educatio					
		15.2	Exercise	s(laboratory	y, Se	eminars 20 hour	S	
				, seminars,				
			team wo	ork				
16.	Other forms of activities	16.1	Project	assignments	ho	ours		
		Stand-al		ho	ours			
			assignm					
		16.3	Home le	earning	10	) hours		
17.	Method of evaluation			, -	-		points	
	17.1 Final	Solvi	ing of a c	ase (semina	r assi			
	exam	<b>TT</b> 7 • 4	40	. •	4 4	min. – max	•	
			ten part	poin		5 - 30		
		Ora	l present	анон р	oints	15 - 30		

	17.2 17.3	t(prese written Active	ment/projec entation : n or oral)			ssignment written	min max.	on		
		partici	pation	Semin	ars*	points	30 - 40			
18.		ia for ev s/score)	valuation	*The seminars are held over five days, for four hours each. Attendance: 4 points; participation: 4 points  The student must achieve minimum 60 points  The scoring is descriptive (passed).						
19.	Criteria for completing the seminar and obtaining the right to a final exam			Conditional criteria: To complete the seminar the student is obliged to attend and take active participation in the seminars, also to achieve the necessary score minimum						
					oare a	he right to a final e a seminar assignme n		-		
20.	_	_	which the onducted	Maced	lonia	n				
21.	Methods for evaluating the quality of the education			teache	Anonymous evaluation by the students of the subject, the teachers and the collaborators who participate in the education					
22.	Litera	ture								
			atory literatur			TWI-	D-1.1'-1	V		
		No 1	Auth R. Kliegma Stanton, J. S N. Schor,	an, B. St. Geme,		Title Nelson Textbook of Pediatrics, 19th edition	Publisher Elsevier Health Sciences	Year 2011		
	22.1	2	R. Behrman  Dushko Mar			Pediatrics	School book, Zagreb	2003		
			T.Lissauer, G. Clayden		,	Illustrated Texbook of Pediatrics	Mosby Elsevier	2011		
		3	Kuzmanovs Grujovska S			Physical Diagnosis in Pediatrics	Medical Faculty, USCM	2011		
			onal literatur					_		
		No	Autho: Meri	r	Dod	Title iatrics and	Publisher Ars Lamina-	Year 2012		
	22.2	1	Rudolph,Tir Lee, Malcol Leven		Chil	ldren's health nslation)	Skopje (A project of the GOM)	2012		
1.	Subjec	t	I			TRANSFUSIOLO	,	1		
2.	Code	n#0 ~# ~ = =				MED 324	andonta			
3. 4.	Organi	program zing Ins Departn	titution ( Unit,	Institute	е,	Undergraduate st Cathedra of Tran Institute of transf				
5.	Educat	ional de	gree (first or se	second Integrated cycle						
6.		mic year	/semester							

8.	Teacher						Blagoevska jana Makarovska	a Rojadzieva
9.	Conditions				7155. 1101. 1	o i iai	dila ivianai o vsik	a Bojauzieva
10.	Aims of stu	dy program: <b>F</b> u	ındamenta	ls of	laboratory a	nd clini	cal transfusiolog	y
11.	Theoretical Transfusio and hemor Practical:	logy rhagic disorde Blood donation	donation, l rs. , Immunoh	L	∡aboratory di	agnosis	od components, ( and treatment o	of thrombotic
10		morrhagic diso		•	1.0.	• ,		
12. 13.	Total numb	study: Lecture	s, Practica	ıl wo				
14.		of activities			30 час	ови		
15.	Forms of ac		15.1.	Leo	ctures		16 часа	
10.	1 011115 01 40							
			15.2.		actical work ninar project	+	14 часа 4 часа	
16.	Other forms	s of activities	16.1.	SCI	illiai project	<u> </u>	7 1404	
10.		9 91 <b>4011</b> (1010)	16.2.	Ind	lividual work		Seminar projec	et
			16.3.				project	
17.	Assesement	t					1	
	17. Tests	3						макс.
	1				First exam			-30
	17 0 :	• • •			Final exam			-36
		narian project presentation)					минм 8	
	`	e participation						імакс.
	3	e participation			Lectures			5-10
					Praxis		12	2-16
			1					
18.	Knowledge		Lectures				6-10	
	assessment	criteria:	Practical				12-16	
			Seminar First exa		ect		4-8 18-30	
			Final exa				20-36	
			Total	.111			60-100	
19.	Criteria for	signature and	1	sence	e of the stude	nts in t	heoretical and pr	actical
	exam						the seminar pro	
20.	Language		Engli	ish				
21.		of quality of					udents in theoret	
22.	teaching  Literature		pract	ical	teacning (cas	e repor	ts, problem solvi	ng-exams)
22.	Literature	Obligatory lit	orofuro					
		Obligatory no	Crature					
		1 Guide	to the pro	enara	ntion.			
			quality Ass					
		Blood C	omponents					
	22.1	of Europ						
	22.1.		tial gide to					
		Groups, G.Danie		orom	ilow,			
			roduction t	0				
			hematology					
			Neville J.		nt			

22.2.	4. Technical Mannual, AABB

1.	Subject					INTI	RODUC	CTION	TO MEDICINI	E
2.	Code					MED 115				
3.	Study Pro	gran	1			General medicine				
4.	Organizin	rganizing Institution (Unit,					<b>1</b> -Facul	lty of M	ledicine	
	Institute,	nstitute, Chair, Department)				Depa	rtment	of Socia	al Medicine	
5.	Education	al	degree	(first	or	Integ	rated cy	cle		
	second cyc	cle)								
6.	Study year	r /seı	nester			First/	I	7.	Number of	2
									credits	
8.	Teacher					Head	of Dep	artment	: Prof. Dr. Fimka	a Tozija
						Respo	onsible	teacher	: Prof. Dr. Mome	2
						Spaso	ovski			
							ching is	conduc	eted by all the tea	chers of
							epartm	ent of S	ocial Medicine	
9.	Prerequisi course:	ites f	or enroll	ing the		None				

# 10. Teaching goals of the study program (competencies):

- Introduction to the basic principles and tasks of medicine.
- Introduction to the history of medicine and public health.
- Character and importance of the medical professions, principles and levels of organization of health care.
- Health and disease and levels of prevention.
- Basic characteristics and prevention of certain diseases and groups of diseases.

# 11. | Contents of the study program:

#### Theoretical course::

- Definition, tasks, and division of medicine; Conditions for a good student of medicine and doctor
- Medical Education, Edinburgh declaration; Retrospective of the development of medicine and public health through the centuries
- Development of modern medicine; Natural scientific basis of medicine
- Theoretical conceptualization and definition of health; Determinants of health; What is disease, natural course of the disease, and levels of prevention
- Principles of organization and levels of the health care system
- Medical professions legislative and ethical aspects; Medical and other professions;
   Internship and professional exam; Specializations and sub-specializations
- Health status of the world's population. Ethical dilemmas and values in public health. Characteristics and prevention of certain diseases and group of diseases.
- International and national organizations in the field of health

#### **Practical course:**

- Control and prevention of communicable and non-communicable diseases
- Introduction to the work and organization of health institutions in Macedonia
   Practical field work in the community

12. **Methods of studying:** Interactive lectures, exercises, seminars and field practical work

13.	Total	no. of hours:			60 hours					
14.	Distri	bution of the avail	able tin	ne						
15.		of educational	15.1		s-theoretical	15 hours				
	activi	ty		course						
			15.2	Exercise	20	15 hours				
			13.2	seminar	•	13 hours				
				work	s, team					
16.	Other	r types of	16.1		assignments	hours				
	activi	· -	16.2	Individu		hours				
			16.3	Home st	tudying	30 hours				
17.	Asses	sment of knowledg	ge:							
	points									
	17.1	Tests				min-max.				
				Cont	inuous assessr	nent points 18-30				
				Cont	inuoue accecen	nent of knowledge				
					loquium): 1 wi	•				
						alf of all areas of the content				
				of co	urse of theoret	cical and practical teaching				
					· ·	oduction to medicine, which				
				is div	is divided into two equal parts.					
		Final exam				min-max.				
				Oral	part *	points 30-50				
				*Ora	*Oral part (integrative) - 3 questions for					
					integrative knowledge, which is important for					
				_		e whole subject				
					_	50 points; $9 = 43-46$ points; $8$				
				= 39-42  points; 7 = 35-38  points; 6 = 30-34						
				point	(s)					
	17.2	Seminar work/pro	•			minmax.				
		(presentation: wri	tten and	Semi	nar works	points 6-10				
	17.3	oral) Active participation	<b></b>			minmax.				
	17.3	Active participation	ЛІ	Theo	retical course*					
				cours		points 3-5				
						r				
				* Pre	esence at the th	eoretical classes				
					4% = 3 points					
					90% = 4  point					
					00% = 5 point					
				hours		(3 blocks of exercises of 3				
					cks = 3 points					
					cks = 5 points					
18.		ledge assessment		up to 59	-	5 (five) F				
	criteri			60 to 68	points	6 (six) E				
	(poin	ts/grade)		69 to 76	points	7 (seven) D				
				77 to 84	-	8 (eight) C				
				85 to 92	•	9 (nine) B				
	1		1 (	93 to 100	nointe	10 (ten) A				

19.	Criteria for obtaining a signature and taking the final exam			get a si theoret achieve To acce predicte 60% of assessn	Conditional criteria for assessment of knowledge: To get a signature the student is required to attend the theoretical, practical training and seminars and to achieve minimum points to access the final exam.  To access to the final exam the student should pass the predicted continuous assessment and to achieve at least 60% of the total number of points for continuous assessment, whereby in the exam session first takes the unpassed continuous checks, then comes to the final							
				table of	f gr es,	ades, based on	the s	med in accordance um of points from a ent and final exam.	all			
20.		_	he course	English	1							
21.			valuation of					on of the subject, to				
	_		education	and col	llab	orators involve	d in t	he educational acti	vities			
22.	Litera	1										
		Manda	atory textboo						T			
			Autho		Title			Publisher	Year			
		1	Seturaman 1	KP.		mmunication	'	Tabernakul	2010			
	22.1					lls in clinical						
					_	actice						
		2	Donev D.			roduction		Faculty of	2013			
		A 1 1'.	1.1%		Me	edicine		Medicine				
		Addıtı	onal literatur		m'.1			D 11' 1	***			
	22.2	_	Autho	r		Title		Publisher	Year			
		1										
		5										
1.	Subje	ct			OTORHINOLARYNGOLOGY							
2.	Code					MED 522						
3.	Study	Progra				General medic						
				ΓΤ <b>!</b> Δ								
4.		Organizing Institution (Unit, Institute, Chair, Department)					•					
4.	Institu	ute, Ch	air, Departn	nent)		Cathedra of ot	torhir					
	Institu	ute, Chational		nent)	nd		torhir					
4.	Institu Educa cycle)	ute, Chational	air, Departn	nent)	nd	Cathedra of ot	torhir ele - f Ten	Number of	6			
4.     5.	Institu Educa cycle)	ute, Chational	air, Departn degree (first	nent)	nd	Cathedra of ot Integrated cyc	torhing the control of the control o	irst	6			
<ul><li>4.</li><li>5.</li><li>6.</li></ul>	Educa cycle) Study	ute, Chational	air, Departn degree (first semester	nent)	nd	Cathedra of ot Integrated cyc	torhing the relationship the relationshi	Number of credits				
4. 5. 6. 8.	Institut Educa cycle) Study	ute, Chational year/s	air, Departn degree (first semester teacher	nent)	nd	Cathedra of ot Integrated cyc Fifth (V)	Ten th( X) Davo	Number of credits  heva Chakar, PhD				
4. 5. 6. 8. 9.	Institute Educacycle) Study Respo	ute, Chational year /s onsible ondition	air, Departn degree (first semester teacher s:	nent) or secon		Cathedra of ot Integrated cyc Fifth (V) Prof. Marina Completed co	Ten th( X) Davo	Number of credits				
4. 5. 6. 8.	Institute Educacycle) Study Respo	ute, Chational year /s onsible to ndition ting goa	air, Departn degree (first semester teacher s:	nent) or secon	ran	Cathedra of ot Integrated cyc Fifth (V)  Prof. Marina Completed con (competencie)	Ten th( X) Dave ourse es):	Number of credits  Cheva Chakar, PhD of VII semester				
4. 5. 6. 8. 9.	Institute Educacycle) Study Respo	year /s onsible ondition ing goa	air, Departn degree (first semester  teacher s: als of the stue nt should learn	dy progi	ran n sy	Cathedra of ot Integrated cyc Fifth (V)  Prof. Marina Completed con (competencie mptoms and sin	Ten th( X) Dave ourse es):	Number of credits  heva Chakar, PhD				
4. 5. 6. 8. 9.	Institute Educacycle) Study Respo	year /s onsible indition ing goa Stude	air, Departn degree (first semester teacher s: als of the stuent should learn tions in otorhin	dy programment of the main molaryngo	ran n sy olog	Cathedra of ot Integrated cyc Fifth (V)  Prof. Marina Completed con (competencie mptoms and sin	Ten th( X) Dave ourse es):	Number of credits  Cheva Chakar, PhD of VII semester				

# 11. Contents of the study program: Theoretical course::

- Clinical anatomy and physiology of the ear, congenital malformations of the external, middle and inner ear, noninflammatory,inflammatory diseases of external ear, acute and chronic middle ear diseases, otogenic complication of otitis, injuries of the middle ear, bone diseases of the middle ear, general aspects of cochlear and retrocochlear hearing loss, treatment of pediatric hearing disorders,vestibular disorders,tumors of the ear, tumors of the cerebellopontine angle, sudden snsorineural hearing loss, temporal bone fractures, diagnosis and managment of facial paralysis, auditory rehabilitation
- Clinical anatomy immunology and physiopogy of the nose and paranasal sinuses. morphology of rhe nasal mucosa, nasal deformities, inflamaton of external nose, nasal cavity and facial soft tissues, sinus inflamation,nasal polyposis, rhinosinugenic complicatios, tumors of the nasal cavity and
  - paranasal sinuses, allergic rhinitis, vasomotor rhinitis, epistaxis, fractures of the nasal pyramid, tumors of the nose nad paranasal sinuses.
- Anatomy, physiology and immunology of the pharynx, diseases of the nasopharynx, oropharynx, peripheral obstructive sleep apnea syndome, tumors, diseases of the hypopharynx and esophagus.
- Anatomy of the external neck, malformation, inflammation and tumors of the neck, clinical anatomy of the larynx and trachea, malformation of the larynx and trachea, infectious diseases of the larynx and trachea in adults and childfren, chronic nonspecific laryngitis, foreign-body aspiration and injures of the larynx and trachea, tumors of the larynx and trachea, airway management, neurogenic disorders of the larynx, clinical aspects of the voice disorders, speech and language disorders.

#### **Practical course:**

- Examination of the ear (inspection and otoscopy), clinical hearing tests, basic princips of audiometry, nystagmus clasification and tests,
- History and clinical examination of the nose, nasal endoscopy, special rhinologic tests, imiging of the nose and paranasal sinuses.
- Methods of examining the farynx,
- Symptomatology and examination of larynx (inspection, palpation indirect and direct laryngoscopy) and trachea, imaging of the larynx and trachea,

	•				
12.	Methods of studying: In	teractive	e lectures	, group work, e	xercises, seminar paper
13.	Total no. of hours:			90 hours	
14.	Distribution of the avail	able tin	ne		
15.	Type of educational	15.1	Lectures	s-theoretical	30 hours
	activity		course		15 hours seminars
		15.2	Practica	ls (laboratory,	45 .hours
			clinical)	,	
			seminar	s, team	
			work		
16.	Other types of	16.1	Project a	assignments	hours
	activities	16.2	Individu	ıal tasks	hours
		16.3	Home st	tudying	hours
17.	Assessment of knowledge	ge:			
	points				

	17.1	Tests						minn	nax		
	17.1	Tests			2	2 Continuo	is tests	111111111111111111111111111111111111111	iun.		
							gy and audiology	12-20	)		
							paranasal sinuses,	12-20			
							x,larynx	12 2	,		
						/		Total 40	points		
									1		
		Final e	exam		5	Subject: otor					
						minmax.					
					I	Practical exa	m 9-10 point	S			
						Oral exam 21-35 points					
							-				
	17.2	Semin	ar work/proj	ect				min	max.		
		(prese	(presentation: written and			Seminar wor	ks	1-3	3 points		
		oral)									
	17.3	Active	e participation	n				minma	ax.		
						Theoretical c	1	nts 1-5			
						Practical cou	rse poir	nts 4-7			
18.	Know	ledge as	ssessment	υ	ıp to	o 59 points		5 (	(five) F		
						60			( : \ F		
	criteri		,			o 68 points			(six) E		
	(poin	ts/grade	)			9 to 76 points 7 (seven)					
						o 84 points			ight) C		
						o 92 points			nine) B		
10	<i>C</i> :	· C 1	,			100 points	e		(ten) A		
19.			otaining a				for assessment of kn e for the course, stude		ge: In		
	final e		taking the				articipate in the activ		cluding		
	Timar C	Aum					ent (the tests).	1005, 111	ciading		
20.	Langu	age of t	he course	Englis			(				
21.			valuation of			us student's	evaluation of the sub	iect, tea	chers		
	the qu	ality of	education	-			lved in the education	•			
22.	Litera										
		Manda	atory textboo	ks							
			Autho	or		Title	Publisher		Year		
	22.1	1	Rudolf Prob	ost	Ва	sic	Georg Thieme	Verlag	2006		
			,Gerhard G	revers,	ot	orhinolaryng	o Stuttgard- New \	ork,			
			Heinrich Iro	)	log	ЗУ					
		7									
		Additi	onal literatur	re							
			Autho	or		Title	Publisher		Year		
		1	K. J. Lee, N	M.D.		J.LEEs	Tenth edition		2012		
	22.2					sential	Copyright mater	ial by			
						olaryngology					
						ad and neck	Companies,				
1	G1 ·	<b></b>			Su	rgery,	I MOLOCY				
1.	Subje	ct					LMOLOGY				
2.	Code	D				MED 523	diaina				
3.		Progra		T 1 4		General me					
4.	_	_	nstitution (				ulty of Medicine				
5.			air, Departn dograe (first		nd	Integrated	of Ophthalmology	•			
٥.	cycle)		degree (first	or seco	nu	integrated (	Lycie				
	cycle)										

6.	Study year /semester	Fifth/ V	Ten	Number of	4		
			th	credits			
			(X)				
8.	Responsible teacher	Prof.Vesna D	imovsl	ka Jordanova MD	,PhD		
9.	<b>Preconditions:</b>	Fulfil	lled c	riteria for asses	ssing Xth		
		semester.					
10.	Teaching goals of the study program	n (competencie	es):				
	<ul> <li>Student's ability for learning base</li> </ul>	sic pathological	signs to	recognize and diff	ferentiate		
	most common ophthalmological of	diseases					
	• Embracing knowledge for performing fundamental skills and general investigations						
	for setting proper diagnosisi of co	ertain ophthalmo	ological	diseases			
11.	Contents of the study program: The	oretical					
	course::						
	<ul> <li>Pathology of orbit and refraction</li> </ul>	ons					
	<ul> <li>Diseases of eyelids, conjunctive</li> </ul>	a and lacrimal	system	1			
	• Diseases of anterior segment –	cornea, iris and	d lens				
	• Classification, clinical course,	diagnosis and	treatm	nent of primary ar	nd		
	secondary glaucoma						
	• Diseases of posterior segment	<ul> <li>vitreus body,</li> </ul>	optic 1	nerve, choroid an	d retina		
	• Strabismus, nystagmys, ambly	opic conditions					

## **Practical course:**

- History and local status
- Basic methods of investigation of anterior segment and slit-lamp examination
- Visual acuity determination
- Special methods of investigation: direct and indirect ophthalmoscopy, tonometry, gonioscopy, perimetry, ultrasound and biometry, FFA, exophthalmometry, Optical coherence tomography of anterior and posterior segment, aplication of laser treatment techniques in ophthalmology
- Introduction with basic principles of most common surgical procedures

12.	Metho	ods of studying: In	teractiv	e lectures	, seminar prese	ntations, exercises, workshop			
13.	Total	no. of hours:			. 60. hours				
14.	Distri	bution of the avail	lable tin	ne					
15.	5. Type of educational		15.1	Lecture	s-theoretical	20 hours			
	activity			course					
			15.2	Practica	ls (laboratory,	Practical - 30.hours			
				clinical)	),	Seminars – 10 hours			
				seminars, team					
				work					
16.	Other	types of	16.1	Project	assignments	hours			
	activi	ties	16.2	Individu	ıal tasks	hours			
			16.3	Home s	tudying	60 hours			
17.	Assess	sment of knowledg	ge:	1					
	points								
	17.1	Tests				minmax.			
				2 Co	ntinuous tests	total points			
				• Generalophthalmology 11					

11,5-19

• Special ophthalmology. . . .

Total number - 38 points

		Final exam		· ·	Ophthalmology			
				minmax.				
				Practical exa	ım	6-11	points	
				Oral exam		25-41	points	
	17.2	Seminar work/pro	ject			minmax.		
		(presentation: writ	ten and	Seminar wor	rks	3-5		
		oral)		points				
	17.3	Active participation	on		1	minmax.		
				Theoretical of	course poir	nts 1-3		
				Practical cou	ırse	points	4-7	
18.		ledge assessment	up	up to 59 points		5 (	(five) F	
	criteri		60	to 68 points		6	(six) E	
	(poin	ts/grade)	69	to 76 points		7 (se	even) D	
			77	to 84 points		8 (e	ight) C	
			85	to 92 points		9 (:	nine) B	
			93 t	to 100 points		10 (ten		
19.	Criter	ia for obtaining a	Conditi	onal criteria	for assessment	of knowledg	e: In	
	signat	ure and taking the	order to	get a signatur	e for the course,	students are		
	final e	exam	obliged	to visit practe	al and theoretic	al lectures wi	ith	
			active pa	articipation, ir	n terms of getting	g minimal po	ints	
			for asses	ssing the conti	inuous tests and	final exam.		
				-				
20.	Langu	age of the course	English					

21.				ymous student's evaluations of the student's evaluations involved in the student's evaluations.		
22.	Litera	•	education and co	onaborators involved in	ii tile educational act	IVILIES
	Dittera	1	atory textbooks			
			Author	Title	Publisher	Year
		1	Blagojevic M.	"Ophthalmology"		2004
		2	Cynthia A.Bredford	"Basic Ophthalmology"	Tabernakul,Skopj e	2011
	22.1	3	Group of authors from the Cathedra of ophthalmology	"Practical skills for the students of	Faculty of Medicine,Skopje	Skopje, 2011
		4 Nancy B.Carlson,Dan Kurtz		"Clinical procedures in ophthalmologic examination"	Tabernakul,Skopj e	2011
		5				
		6				
		7				
		Addit	ional literature			
			Author	Title	Publisher	Year
	22.2	1	Group of Authors	Ophthalmology (12 books)	American Academy of Ophthalmology (AAO)	2012
		2	Jack. J. Kanski	Clinical Ophthalmology	Vth Edition,Datastatu s	2003

	3	Dzajkovska		Jofisken,Skopje	2005
		E,Dimovska V.	Monography		
	4	BogoevM,	Diabetic		2000
		Dimovska V.	retinopathy,		
			Monography		
	5				

1.	Course title	FAMILY MEDI	CIN	E- CLINICAL P	RACTICE
2.	Code	MED 616			
3.	Study program	General Medicine	2		
4.	The organizes of the study ptogram	UKIM Medical F	acult	.y	
	(unit, institute, department)	Department for Fa	amily	y medicine	
5.	Degree of education (first, i.e second cycle)	Integrated cycle			
6.	Academic year/semester	Sixth/XI- XII	7.	Number od ECTS credits	2
8.	Teacher	Head of the Depa *The teaching is particular teaching is particular teaching is particular teaching in the particular teaching in the particular teaching is particular teaching in the particular teaching in the particular teaching is particular teaching in the particular teach	perfo	rmed by all meml	
9.	Prerequisites for registering subject	Credits(passing ex	xam)	from family med	icine

# 10. **Objectives of the course program:**

Introduction to the organization of the work in the ambulance and integrating the acquired knowledge and skills using the basic principles of family medicine in solving the problems that patients come to ambulance.

#### 11. Course content:

The student at the end of the course will:

- Describe the position of primary health care system
- Describe which conditions are addressed in primary health care
- Assign appropriate diagnostic procedures and treatments according to the incidence and prevalence of diseases
- Explain the specifics of the patient doctor's relationship that are unique in family medicine
- Conduct a consultation
- get acquainted with running a chronically ill patient
- conducted a consultation and proposed initial therapy for acute illness
- solve cases where there is clinical insecurity
- discuss with the educator on the ethical aspects of family medicine
- demonstrates empathy and respect for the patient
- promote health promotion and disease prevention in patients

Clinical practice will be organized in the course of 1(one) working week full time of 8 hours in ambulance under the supervision of an educator. 4 clinical rotations will be organised during the XI and XII semester. Everyday activities of the student will be recorded in a separate "activity log" that will be verified with the educator's signature.

1.	Subject	ONCOLOGY
2.	Code	MED 423
3.	Study Program	General medicine

4.	Organizing Institution ( Unit,	Ss. Cyril snd	Metho	dius University, Faculty of l	Medicine
	Institute, Chair, Department)	•		ology and Radiotherapy	
5.	Educational degree (first or second cycle)	Integrated 6-	year stı	udy	
6.	Study year /semester	Forth (IV)/Eight (VIII)	7.	Number of credits	2
8.	Responsible teacher	Prof. Snezha	na Smi	chkoska, Prof. Valentina Kr	stevska
9.	<b>Preconditions:</b>	Enrolled eigh	it seme	ster	
10.	Teaching goals of the study progr Students to become acquainted with  - terminology in oncology  - epidemiology of cancer, canc  - diagnostic procedures and sta  - principles of cancer surgery, of therapy, immunotherapy, prospecific oncological treatment  - special problems in oncology  - clinical characteristics, diagnostic diseases (breast cancer, lung	er prevention and aging chemotherapy, rincipals of mulents and oncologic osis and treating cancer, genite	radiother radiot	nerapy, hormonotherapy, tar plinary treatment, side effect rgencies the most common solid mali y malignancy, gynaecologic	ignant
	malignancy, gastrointestina cancers, malignant melanon				kin

# 11. Content of the programme –theory (T) and practise (P):

Module 13T (theory)+2P (practise) classes

- Introduction to oncology, oncological terminology and cancer related terms
- Epidemiology of cancer
- Cancer prevention, screening, early diagnosis
- Pathology and molecular biology of cancer
- Approach to cancer patient
- Tissue diagnosis in cancer
- Evaluation of patient, imaging modalities, staging

#### Module2 3T (theory)+5P (practise) classes

- 1. Therapeutic modalities in oncology
- Surgical oncology
- Radiotherapy
- Chemotherapy
- Hormonotherapy
- Target therapy
- Immunotherapy
- 2. Multidisciplinary approach
- 3. Acute and chronical side effects of cancer therapy

#### Module3 3T (theory)+5P (practise) classes

- 1. Malignant tumours of thorax
- Lung cancer
- Breast cancer
- Mediastinal tumours

## Module4 5T (theory)+5P (practise) classes

- Genitourinary malignancy
- Gynaecological malignancy
- Gastrointestinal cancers
- Head and neck cancers
- CNS cancers
- Skin cancers and malignant melanoma
- Bone and soft tissues cancers

## Module5 3T (theory)+3P (practise) classes

- 1. Special problems in oncology and oncological emergencies
- Raised intracranial pressure
- Spinal cord compression
- Bone marrow suppression
- Malignant effusions
- Superior vena cava obstruction
- Hypercalcemia
- Paraneoplastic neurological syndromes
- Cancer vein thrombosis
- 2. Cancer pain
- 3. Terminally ill patient

12.	<b>Methods of studying:</b> Theoretical and interactive lectures organised in 5 thematic modules	
	concurently with practical group work and exercises	

Total available time:			60 classes		
Organization of the co	urse		45 classes-theoretical course, practical course,		
			seminars		
			15 classes-hor	me individual learning	
Forms of teaching	15.1	Theoret	ical course	20 hours	
	Organization of the co	Organization of the course	Organization of the course	Organization of the course  45 classes-the seminars 15 classes-ho	

	activities	15.2	Practicals course, team work, seminars	25 hours
16.		16.1	Practice	

	Other	forms	of	16.2	Individual ta	asks			
	activit			16.3	Individual learning	(home)	15 hours		
17.	Assess	sment o	of knowled	ge:	icurining			points	
	17.1	Tests		9-1	Continua Included		nent 1(test) ,2 and 3	minmax. 20-32	
		Final	exam		Subject: Included	Module 4	and 5		
						Written exam (test)+Practical exam+ Oral exam total 29-49 points			
					minmax Written e points			21-37	
					Practical	and Oral	exam	8-12 points	
	17.2		/project entation: w	ritten	Seminar	works			
	17.3		e participat	ion			min.	-max.	
			1 1		Theoretic	al course	point	ts 1-3	
					Practical	course	point	s 10-16	
18.		ng crite			up to 59 poin			5 (five) F	
	(point	ts/grade	e)		60 to 68 poin			6 (six) E	
					69 to 76 point			7 (seven) D	
					77 to 84 point			8 (eight) C	
					85 to 92 point			9 (nine) B	
19.	Poqui	romonte	for	93 to 100 points 10 (te Conditional criteria for assessment of knowledge:			10 (ten) A		
17.	Requirements for signature and taking the final exam			7. 1 8. 1 9. 1	In order to tak minimum point order to tak minimum point the student continual asse	te the sign that in both the the fina that in the chas not ob- the ssment, h	ature, the student should on theoretical and practical of lexam, the student should continual assessment. It is betained the minimum point ee/she will be obligated to present the student of the student should be obligated to present the student should be obligated to present the student should be should be obligated to present the student should be obligated to present the student should be sh	courses. obtain the	
20.			nstruction	Mace	the final examedonian				
21.	the	od of mo qualit ng proc	•	Attendance of students to classes and interactive participation in theoretical and practical lessons.					
22.	Literat			1					
			atory textbo	ooks					
			Auth		Titl	e	Publisher	Year	
	22.1	1	Vincent d	eVita	Cancer: Pr and Practic Oncology	-	10th edition AVAILABI ONLINE LWWHealthLibrary.com	AT	
							cology.		

		2	David J. Kerr, Daniel G. Haller, Cornelis J. H. van de Velde, and Michael Baumann		ncology	Oxford Textbook	2016	
		3	Снежана Смичкоска Валентина Крстевска	Авториз: предаван	_	Поместени на страницата на Медицински факултет	2017	
		4	Валентина Крстевска Снежана Смичкоска	Радиотер канцери главата и		Медицински факултет	2015	
	22.2	Addit	ional literature					
			Author	Ti	tle	Publisher	Year	
1.	Subje	ect			PUBLIO PRACT	C HEALTH - CLINICAL ICE		
2.	Code	<u> </u>			MED-61			
3.	Study	y Progr	am		General	medicine		
4.			Institution (Unit, I rtment)	Institute,	UKIM-Faculty of Medicine Chair of Epidemiology and Biostatistics, Chair of Occupational Medicine, Chair of Social Medicine, Chair of Hygiene			
5.	Educ		degree (first or se	econd	Integrated cycle			
6.			semester		Sixth (VI) year / Eleventh - twelfth (XI-XII) semester			
7.	Num	ber of l	EKTS credits		4			
8.	Respo	onsible	teachers		Prof. d-rvesna Veljic Stefanovska, Prof d-r Jovanka Karadzinska Bislimovska, Prof d-r Fimka Tozija, Prof d-r Mihail Kochubovski* the education process is performed by all members of the Cathedra			
9.	Preco	ondition	ns for starting the	subject	Acquired followin Hygiene Epidemi	Acquired credits (passed exams) from the following subjects: Social Medicine, Hygiene, Epidemiology and Biostatistics and Occupational medicine		
10.	Adop	tion of		les, knowl	ompetence edge and			

# 11. Contents of the study program:

# Hygiene

- Application of the basic methodological approach for eco-toxicological risks assessment
- Exposure and health risk assessment from physical, chemical, biological and radiological agents in the environment
- Regulations, standards and food safety monitoring
- Nutrition and physical activity, public health importance through practical examples
- Strategies and policies to determine priorities and risk management in the field of environmental health, nutrition and food safety

## **Social Medicine**

- Evaluation of health, individual and community health
- Health care system organization and evaluation
- Priority public health problems, risks, strategies, policies
- Health promotion and disease prevention
- Health Policy, Health Economics and Management: analysis

of policies and good practice

# **Occupational Medicine**

- Work place, work environment, professional risk assessment of the effects of occupational exposure on the health of exposed workers
- Occupational diseases, work-related diseases and injuries at work: clinical (diagnostic, therapeutic procedures) - preventive and public health aspects in practice
- Work ability assessment, absence, disability, rehabilitation
- Preventive Strategy levels and measures; workplace health promotion (multidisciplinary and intersectoral approach); legislative aspects (examples and solutions in practice)
- Interventional public health prevention programs (examples, analysis, recommendations) in occupational medicine

# **Epidemiology and Biostatistics**

# **Epidemiology**

- Epidemiological principles, models, epidemic process, prevention measures
- Epidemiological methods (descriptive, analytical, experimental)
- Epidemiological features of certain communicable and non-communicable diseases

#### **Biostatistics**

- Descriptive statistical methods
- Analytical methods
- Vital statistics

The study program will be arranged within 2 working weeks (full time 8 hours). Four courses will be organized during the XI and XII semester.

Students are organized in groups consisting of 2-5 members (students) on mentor principle by the professors and assistants. During the course different departments and mentors are taking place. Student's daily activities will be registered in a separate "Diary of activities"which will be verified by a mentor's signature.

## 12. **Methods of learning:**

17.2

- Interactive work, work on mentor's principle, individual work, work in small groups, problem solving
- Processing, reporting and case resolving of different segments of public health practice
- Data analysis, computer simulation

Seminar work/project

(presentation: written/oral)

- Evaluation of the scientific literature, consulting, essays, seminar papers
- Problem resolving designed seminars, discussion, public presentation

L							<del>-</del>	
	13.	Total a	available amount of	learning	hours	120 hours		
	14.	Distrib	oution of the availab	ole learnir	ng time	80 hours prac	ctical work	
						40 hours hom	ne learning	
	15.	Types activit	of educational ies	15.1.	Practical (laborate seminars	ory, clinical),	80 hours	
	16.	Other	types of activities	16.1.	Home le	earning	40 hours	
Ī	17.	Types	of knowledge asses	ssment				points
		17.1	Final exam					min max.
					Semi	nar work 🏻 p	oints	36 - 60

presentation

Seminar work: written form + public

	17.3	Act	ive pai	rticipation		Practical	l course * poi	min m nts 24 - 4			
						hours (for Presence The stude each subbiostatis	ourse is organize all time). e: 2 points; activ lent should get a oject of the pract tics, occupationa e, hygiene)	ity: 2 points minimum 6 poice (epidemiolo	oints of		
18.	Knowl criteria	_					btain minimum (iptive (passed).	60 points. Stud	ent		
19.	Criteria signatu final ex	ire ai			In order exam, th	Conditional criteria: n order to obtain a signature and get access to the final exam, the student should attend the practical work and					
20	T		C.1		In order finis the	obtain minimum points.  In order to get access to the final exam, the student must finis the seminar work.					
20. 21. 22.	Methodo the quality	d for ality	evalu	ation of	_		ent's evaluation of involved in the o	<b>3</b>			
22.	Literat	ure	Mand	latory textb	noks						
			No.		Authors		Title	Publisher	Year		
			1.	Robert B.		ed.	Public Health	OEM Press	2008		
				Maxey-Ro		*	and	Publication,			
							Preventive Medicine	Denver- New	2011		
								Orleans, USA Tabernakul,			
								Skopje			
			2.	Gjorgjev I M, Kendr Ristovska	ovski V,	bovski	Hygiene and environmenta l health	Faculty of Medicine, Skopje	2008		
		_	3.	Gjorgjev M, Kendr	D, Kochu ovski V,	bovski	Food Hygiene and	Faculty of Medicine,	2008		
	22.1	•		Ristovska			Nutrition	Skopje	2012		
			4.	Donev D, Tozija F, Gudeva-N Kasapinov	Kosevska Iikovska I	E, D,	Social Medicine	Faculty of Medicine, Skopje	2012		
				Hristovsk Simonovs		revik V,					
		-	5.	Bislimovs J, Minov	ska-Karad J, Risteska	a-Kuc S,	Occupational Medicine	University "Sts. Cyril	2011		
				TTIJUKOSKI	2, 5000	, , , , , , , , , , , , , , , , , , ,		Methodius", Skopje			
		-	6.	Stikova E	•		Occupational Medicine	Faculty of Medicine, Skopje	2012		

		7.	Danilovski I N, Vasilevs Taushanova	ka K,		Biostatistics	Faculty of Medicine, Skopje	2005
		8,	Stefanovska R, Ivanovsk Zdravkovsk I Danilovski N, Vasilevsl Taushanova VelikjStefar Isjanovska R, Ivanovsk Zdravkovsk I	a-Zafiro a M, Pa D, Orov ka K, hovska	ova B, avlovska vchanec B, V,	General Epidemiolog y	Faculty of Medicine, Skopje	2007
		9.	Danilovski I N, Vasilevs Taushanova VelikjStefar Isjanovska R, Ivanovsk Zdravkovsk I Tulchinski T	ka K, novska a-Zafire a M, Pa	B, V, ova B, avlovska	Special Epidemiolog y  The New Public Health Introduction to 21st	Faculty of Medicine, Skopje ,,,Studentski zbor", Skopje	2007
		Addi	 tional literatu	re		Century		
		No.	Authors	-	Tit	le	Publisher	Year
		1.	Robert H.	_	miology fo		Academic	2011
			Fries, Thomas A. Sellers	Health	1		Press, Skopje	
	22.2.	2.	Thomas	Admin Health	nistration n: pringement ba	of Public nciples for sed on	Skopje Academic	2011
1.	22.2. Subject		Thomas A. Sellers Lloyd F. Novik, Cynthia B. Morrow, Glen P.	Admin Health manag	nistration n: pringement ban ation	nciples for	Skopje Academic Press,	2011
1. 2.			Thomas A. Sellers Lloyd F. Novik, Cynthia B. Morrow, Glen P.	Admin Health manag	nistration n: pringement ban ation	nciples for sed on OPEDICS	Skopje Academic Press,	2011
	Subject	2.	Thomas A. Sellers Lloyd F. Novik, Cynthia B. Morrow, Glen P.	Admin Health manag	onistration  i: pringement base  ation  ORTHO  MED 51	nciples for sed on OPEDICS	Skopje Academic Press,	2011
2.	Subject Code Study Pro	2.	Thomas A. Sellers Lloyd F. Novik, Cynthia B. Morrow, Glen P.	Admir Health manag popula	onistration  i: pringement base  ation  ORTHO  MED 51  General	nciples for sed on OPEDICS	Skopje  Academic Press, Skopje	
2. 3.	Subject Code Study Pro Organizin	2. gram g Insti	Thomas A. Sellers Lloyd F. Novik, Cynthia B. Morrow, Glen P. Mays	Admir Health manag popula	onistration  i: pringement base  ation  ORTHO  MED 51  General	OPEDICS 2 medicine Faculty of Medical	Skopje  Academic Press, Skopje	
2. 3.	Subject Code Study Pro Organizin Institute,	gram g Insti Chair,	Thomas A. Sellers Lloyd F. Novik, Cynthia B. Morrow, Glen P. Mays	Admin Health manag popula	onistration  i: pringement backet  gement backet  order  o	DPEDICS 2 medicine Faculty of Medical pedics	Skopje  Academic Press, Skopje	
2. 3. 4.	Subject Code Study Pro Organizin Institute,	gram g Insti Chair, al d cle)	Thomas A. Sellers Lloyd F. Novik, Cynthia B. Morrow, Glen P. Mays  tution ( Unit Department egree (firs	Admin Health manag popula	ortho ORTHO MED 51 General UKIM-F	DPEDICS 2 medicine Faculty of Medical pedics ed cycle	Skopje  Academic Press, Skopje	
2. 3. 4. 5.	Subject Code Study Pro Organizin Institute, Education second cyc Study year	gram g Insti Chair, al d cle) r /seme	Thomas A. Sellers Lloyd F. Novik, Cynthia B. Morrow, Glen P. Mays  tution ( Unit Department egree (firs	Admin Health manag popula	ortho  ORTHO  MED 51  General  UKIM-F  of Ortho  Integrate	DPEDICS 2 medicine Faculty of Medical pedics ed cycle	Skopje  Academic Press, Skopje  cine Department	nt 3
<ul><li>2.</li><li>3.</li><li>4.</li><li>5.</li><li>6.</li></ul>	Subject Code Study Pro Organizin Institute, Education second cyc	gram g Insti Chair, al d cle) r /semo	Thomas A. Sellers Lloyd F. Novik, Cynthia B. Morrow, Glen P. Mays  tution ( Unit Department egree (firs	Admin Health manag popula	ortho ORTHO MED 51 General UKIM-F of Ortho Integrate Fifth/IX	DPEDICS 2 medicine Faculty of Medical pedics End cycle 7. No. Crustal Anastasika Porty condition for	Skopje  Academic Press, Skopje  cine Department  amber of edits poska, MD, Ph	at 3

# 10. Teaching goals of the study program (competencies):

- The student should learn and master the skills concerning rational diagnosis and contemporary treatment embodied into the ethiopathogenesis of the diseases.
- The student should be capable of clinical assessment and treatment of muscle-skeletal system diseases
- Contemporary clinical assessment should be founded on a rational diagnosis, especially on clinical examination, which can result in other examinations (laboratory, ultrasound, radiographic, computer etc).
- Contemporary treatment will be done according to the newest achievements in medicine based on evidence.

#### 11. Contents of the study program:

# Theoretical course::

- Basics in orthopedic surgery
- Congenital disorders of the bone and joint system
- Inflammatory diseases of the bone and joint system
- Degenerative diseases of the bones and joints
- Normal and disturbed healing of the bone
- Tumors of the muscle-skeletal system
- Congenital and acquired diseases of the locomotor system (neck, spine, pelvis, thorax, shoulder, elbow, wrist, hand, knee, foot)
- Canalicular syndromes of the upper and lower extremities
- Orthopedic devices

#### **Practical course:**

points

- Practical applications and clinical skills in orthopedics
- Measuring of the size and length of the upper and lower extremities
- Clinical signs and tests for diagnosis knee injuries
- Clinical signs and tests for diagnosis osteoarthritis of the joints
- Practical course on phantoms
- Measurements and tests for diagnosis of spine deformities
- Podometric measurements, diagnosis and treatment of congenital foot deformities in children
- Clinical signs and tests for early diagnosis of congenital hip dysplasia in children
- Clinical approach for diagnosis of soft tissue and bone tumors
- Introduction into orthopedic surgical techniques

12.	Methods of studying: Interactive lecturing, practical education/seminars					
13.	Total no. of hours:			120 hours		
14.	Distribution of the available time			60 hours lecturing, practical education/seminars 60		
				hours home stud		
15.	Type of educational activity	15.1	Lectures-theoretical course		30 hours	
	·	15.2	Practicals (laboratory, clinical), seminars, team work		25 hours 5 hours	
16.	Other types of activities	16.1 16.2 16.3	Project assignments Individual tasks Home studying		0 hours 0 hours 60 hours	
17.	Assessment of knowled		Tionic	Studying	100	

17.1	Tests		minmax.
		Continuous tests	total points
			26- 45
	Final exam	Subject: Orthopedics	
			minmax. Practical
		exam	26-45 points
		Oral exam	17-29 points

		0101 010011	17 2) points
	17.2 Seminar work/project (presentation: written and ora	works	minmax. Seminar points
	17.3 Active participation	Theoretical course Practical course * presence during theore 51% - 60% - 5 points; 61% - 70% - 6 points; 71% - 80% - 7 points; 81% - 90% - 8 points; 91% -100% -10 points.  ** practical education (6) Presence: 2 points Activity during exercises: *** continued examinati Theoretic elements in orth **** final examination: Practical part (examination: Practical part of the examination the examination of the examination the examination of the examinati	2 points.  2 points.  5 exercises in duration of 4 hours):  2 points.  6 on - 1 written test  1 appedics - (26 - 45 points)  1 practical + oral - (17 - 29 points)  2 points of a patient, differential  3 cording to the catalogue of skills ording to the integrative  4 points, 7 = 20-21 points, 8 = 2224
18.	Knowledge assessmen criteria: (points/grade)	t up to 59 points 60 to 68 points 69 to 76 points 77 to 84 points 85 to 92 points	5 (five) F 6 (six) E 7 (seven) D 8 (eight) C 9 (nine) B
19.	Criteria for obtaining a signature and taking the final exam	order to get a signature, to minimum points in both courses and seminars and In order to take the final the continuous tests or wo of the continuous tests; the final exam.  The grade in the compress to the grading table, and obtained in all of the activexam.	assessment of knowledge: In the student should obtain the theoretical and the practical d to win minimum of total points. exam, the student should pass in minimum 60% of total points han the student may aproach to thensive exam is given according on the basis of the sum of points evities, continous tests and final
20.	Language of the cours	e English	

21.		Method for evaluation of the quality of education		Anonymous student's evaluation of the subject, teachers and collaborators involved in the educational activities				
22.								
		Mand	Mandatory textbooks					
	Author 22.1 1 A. Greenspa		Author		Title	Publisher	Year	
			an	Orthopedic	Government of	2012		
	22.1				Imaging -A	RM		
					Practical			
					Approach			

		2	B.J.Zitelli, H.V. Davis	Atlas of Pedia Physical Diagnosis (Chapter – Orthopedics 781-867)	atric Gov RM	vernment of	2011
		3	R.E.Rakel	Textbook of Family Medic Orthopedics. 857915 p.		vernment of	2011
		Addit	ional literature	•	<b>"</b>		<b>"</b>
			Author	Title		Publisher	Year
		1	Group of authors	Authorized lectures of the Department			2009
		2	I. Rushkovski	Orthopedics		dicinska lada Zagreb	1976
	22.2	3	P.B.Pynsent, J.C.T.Fairbank, E.J.Carr	Outcome Measures in Orthopedics a Orthopedic Trauma			
		4	Zafirovski Gj, Grkova V, Kamnar J, Nojkov J, Poposka A, Bozinovski Z, Samardziski M et al	Children's Orthopedics	Kul	tura Skopje	2003
		5	Z. Temelkovski	Shoulder Join	t		
		6	A. Poposka	Ultrasound Diagnostics of Child's Hip Congenital Dysplasia		sta Abrashevic id	1995
1.	Title o	f the tea	ching subject	BASIC PRINCIPLES OF THE SCIENTIF AND INVESTIGATION WORK			
2.	Code			MED-226			
3.		program	1	General medici	ne		
4.	Organizer of the study program (Unit/Institute, Cathedra, Department)						
5.	cycle)		cation (first i.e. second	Integrated cycle	e		
6.	Acade	mic yeai	r/semester	Second /IV	7.	Number of EKTS credits	1.5

	T						
8.	Professors		Responsible teacher:				
			Prof. Dr Ljubica Georgievska-Ismail				
			Theoretical teachers: Prof. Dr. Ljubica Georgieva-Ismail				
				r. Olivera Stojche			
				r. Biljana Janeska			
			Prof.	Katerina	Tosheska-		
				vska Prof. D	5		
				tis <i>Practice teach</i> Pr. Marija Valvuki	o .		
		1. Iviarija varvaki					
			Sen. R	tes. Fellow Biljan	a Gerasimovska-Kitanovska		
				Or. Katerina Tosh			
				ell. Dr, Irina Pavl			
				Or. Lidija Poposka Ooc. Dr/ Zhanina I			
				nja Smilevska, pl			
9.	Preconditions for starting th	e subject		ed semester			
10.	Goals of the subject program	-	ng acquair	ited with:			
	• The essence and the mea	ning of so	ientific in	vestigation and	the principles of the scientific		
	method;				-		
	• The components of the s	cientific p	rocess an	d its understandi	ing;		
	Medicine based on evide	_					
	· Discovering of the sourc	es for scie	ntific-inv	estigation projec	t and acquisition of basic		
	knowledges for a critical				-		
	Basic principles for scient	tific ethic	s, team w	ork and the mea	ning of the authorship;		
	Basic principles and rule						
	results from the scientifi				1		
11.	Contents of subject program						
	Theoretical course (10 hou	ırs))					
	<ul> <li>Introduction of the subject</li> </ul>	ect, obliga	tions, exp	ectations,			
	Science and scientific me	ethod-wh	at is it, his	tory, meaning a	and principles.		
	<ul> <li>Terminology in science,</li> </ul>	types of e	vidences,	strength of reco	mmendations		
	<ul> <li>Design of the scientific-i</li> </ul>	nvestigati	on project	-			
	<ul> <li>Medicine based on evide</li> </ul>	nces and	its applica	ation			
	<ul> <li>Usage of bio-medical bas</li> </ul>	es of data					
	• Ethics in the scientific-in	nvestigatio	on work a	nd responsible a	ttitude in science.		
	• Elaboration of scientific	paper and	preparati	on for publication	on, style, language and		
	presentation.			_			
	<ul> <li>Critical estimation of par</li> </ul>	rts of the s	scientific <sub>I</sub>	paper. Practice (	18 hours)		
	- Practice 1. How to choose			_			
	resources on internet by						
	- Practice 2. Planning and of themes with a special ret				ation – practice of the assigned		
					amples (plagiarism, conflict of		
	interest, prevention of co				r u		
	- Practice 4. Parts of the pa	per: Critic			e paper (title, design, material		
	and methods, results, dis		-				
12	- Practice 5. Quotation of l						
12. 13.	Methods of learning: Interaction Total available amount of learning			_	oject tasks by choice)		
14.	Distribution of the available			50 Hours (+ pro	ojeci iasks by choice)		
15.	Forms of teaching	15.1.		<ul><li>theoretical</li></ul>	10 hours + 2 hours test		
15.	activities	10.1.	teaching	oronom	10 Hours   2 Hours test		
		15.2.		Seminars	18 hours		
16.	Other forms of activities	16.1.	Practice				
10.	Said forms of activities	16.1.	Indones				

Independent tasks

By choice

16.2.

			16.3. H	Iome learning		
17.	Way o	f estimation	1	Points		
	17.1	Continuous tests		Mini-quiz after practice exact answer is given 1		5 (for arch
				exact answer is given i	point)	Min. – max. 23 - 38
	17.2	Final exam		Written:		min. – max;. 27 - 45
				(30 questions: 1.5 point i Minimum 60% exact ans	•	act answer
	17.3	Seminar (presentation: oral)	work/project	There are bonus points to task/publicly presented the beginning of the lect	for those who have	

	17.4	Active participation	n			Minmax.
					Theoretical lecture*:	4 - 6
				Pr	actical lecture: presence*:	4 - 6
				* Presence of m	nin 70% hours= 4	
					n. 80% hours= 5	
					n. > 90% hours= 6	
18.	Criteria	for assessment	J	Jp to 59 points		5 (five) F
	(points/	mark)	Up to 0	60 to 68 points		6 (six) E
			Up to 0	69 to 76 points		7 (seven) D
			Up to 7	77 to 84 points		8 (eight) C
			Up to 8	85 to 92 points		9 (nine) B
			Up to 93	3 to 100 points		10 (ten) A
19.	Criteria	for obtaining a	To get	the signature, th	e student should win minim	um points
	signatur	e and taking the fir	nal from h	is/her attendanc	e at theoretical and practica	l lectures.
	exam					
					ect is formed according to	
					of the points from all the ac	ctivities, the
20	T			us testing and th		
20.	is perform	ge on which the lec	ture Macedon	ian, if necessary	on English	
21.		for evaluation of the	ne Anonymo	nus student's ev	aluation of the subject, teac	hers and
21.		of education			the educational activities	ners una
22.	Literatu		l l			
		Mandatory lit	erature			
	22.1			Prof. Dr. Katica	Zafirovska and Prof. Dr. L	jubica
		Georgie	vska-Ismail			
	22.2	Additional lit	erature			
	22.2	1. Panzova	V. Science as a	a trade. Faculty	of Philosophy, UKIM, 2003	3.
				oduction in scien	tific work in medicine. Sko	pje,
		Kultura,				
		_			e and public. Skopje, Institu	ite for
	a		-biology and H	uman Genetics,		
1.	Subjec	t			IYSIOLOGY 1	
2.	Code	D		MED 223	41.1	
3.		Program ·			General Medicine	
4.	Institut		nartment)		and Methodius Universit partment of Pathophysiolog	
5.	(Unit, Institute, Chair, Department)  Degree of education (first		Integrated 6		6 <b>)</b>	
٦.		ond cycle)	ι	integrated (	-year study	
6.		year/semester		Second (I	I) / 7.Number of 7	
J.	Study	j cai, sciiiostoi		Fourth (IV)		
8.	Respo	nsible teacher		` ′	la Pop Gjorcheva,PhD, MD	)
1		ditions			f Physiology 1	

## 10. Teaching goals:

- Object and methods of pathophysiology (exploration of the ethiology and the pathogenesis of diseases on experimental models and by clinical methods)
- General mechanisms of compensation and decompensation in disturbancies caused by the pathological influence of external factors
- Factors of the general reactivity and the immunity, their disturbances and their relationship with external medium
- Mechanisms of initiation and manifestation of pathological situations with general functional disturbances
- Mechanisms of metabolic disorders
- Pathophysiological mechanisms of the hematopoetic system's diseases

#### 11. Brief content:

#### **Theoretical course:**

- health, desease, death; ethiology and pathogenesis, compensation, decompensation, sufficiency, insufficiency
- pathogenic influence of the environmental (external) factors (physical, chemical, biological and psychical factors)
- general reactivity and immunity, inheritance and environment
- disturbances of innate immunity (complement, phagocytosis, interferon)
- disturbances of adaptive immunity, hypersensitivity, immunodeficiency, autoimmunity, transplant reaction
- disturbances in pathological situations with general functional disorders (hypoxia, fever, fatigue, peripheral circulatory disorders), pathophysiology of the oldness
- disturbances of the energetic metabolism and of the protein, carbohydrate,lipid, water, electrolyte and vitamin metabolism
   disturbances of hematopoetic system

#### **Practical lessons:**

• experimental practices on experimental animals, demonstrations on students, presentation of in vitro and in vivo methods

# 12. **Methods of studying:**

Classic - Ex cathedra teaching and interactive teaching during lectures and practical trainings, independent study by using textbooks, computer assisted learning

13.	Total available time:			210 classes	
14.	Organization of the course		105 classes - theoretical course, prac course, seminars 105 classes - home individual learning		
15.	Forms of teaching activities	15.1.	5.1. Theoretical course		45 classes
		15.2.	Practical Seminars	*	60 classes
16.	Other forms of activities	16.1.	Practice		
	16.2. Individu		Individua	al tasks	
		16.3.	Individua	al (home) learning	105 classes
17.	Method of assessment				

	17.1	Tests		min – max
	17.1	Tests	compensation, deco insufficiency. Patho enviromental (exter and immunity; Disti pathological conditi disorders 18 - 30 points 2. Disturbances of men 18 - 30 points Final exam: final test + oral	sts (written form) ath; ethiology, pathogenesis, compensation, sufficiency, ogenic influence of the rnal) factors; General reactivity urbances in the course of ions with general functional
			experimental model  Complete exam - comb  (written form) plus fina	6 - 10 points bination of the failled exam al test and final oral exam <b>Full</b> the two failled exams plus
	17.2	Seminar paper/project (oral/written presentation) Active participation	activities, including particip of knowlidge in order to ge  Pointing of student's activit Theoretical course (% of promine of the student's activity Theoretical course (% of promine of the student's activity Theoretical course (% of promine of the student's activity Theoretical course (% of promine of the student's activity Theoretical course (% of promine of the student's activity Theoretical of the student's activity Theoretical course (% of promine of the student's activity Theoretical course (%	ties: resence) at
18.		ng criteria s / grade)	up to 59 points from 60 to 68 points from 69 to 76 points from 77 to 84 points from 85 to 92 points from 93 to 100 points	5 (five) F 6 (six) E 7 (seven) D 8 (eight) C 9 (nine) B 10 (ten) A

20. 21. 22.	Requirement for signature and taking the final exam  Language of instruction  Method of monitoring the quality of teaching process  Textbooks  Mandatory			Conditions In order to points in both In order to minimum particles that assessment final exam. English Attendance	get a get a take points not os, he	teria for assessment of signature, the student she eoretical and practical content the final exam, the student in the two continual assobtained the minimum poshe will be obligated to tudents to classes and in the distribution of the content of th	knowledge: nould obtain min ourses. ent should obtain sessments; If th oints in the cont pass them before	imum the e inual e the
		1.	Vaskova O, Ristevska S, D, Miladino Loparska S,	, Pop Gjorc va D,		General pathological physiology	RC Copy, Medical faculty, Skopje	2013
	22.1.		Vaskova O, Ristevska S, D, Miladino Loparska S:	Miceva , Pop Gjorc		Practical course for general and special pathological physiology	Boro Grafika, Skopje	2013
	22.2.	Ado	litional					
		1.	Gamulin S e	et all:		Pathophysiology	Jumena Zagreb	2014
		2.	Tadzer I et a	all:.		General pathological physiology	Medicinska knjiga, Beograd	1984
		3.	McPhee SJ, O	Ganong WF:		Pathophysiology of disease. An introduction to clinical medicine	Langee medical Books/McGr aw-Hill, New York	2003
1.	Subject				PA	     THOPHYSIOLOGY 2		
2.	Code					D 311		
3.	Study Progr	ram				eral Medicine		
4.	Institution (Unit, Instit	ute, C	Chair, Departm	ent)		Cyril and Methodius ulty, Department of Path	•	/ledical
5.		of (	education	,		grated 6-year study		
6.	Study year/		•		Thi Fift	rd (III) / 7.Number h (V) credits	of 4.5	
8.	Responsibl	le tea	cher			f. Daniela Pop Gjorcheva	a, PhD, MD	
9.	Preconditio				Exa	m of Physiology 1, Sign	ature of Physiol	ogy 2,
10.		Γo get	t introduced wi		ms o	f initiation, course and o and bile and endocrine	utcome of heart	and

11.	Theore :	ontent: etical course disturbances of car disturbances of res disturbances of fig disturbances of her disturbances of her disturbances of end experimental pract presentation of in v  ds of studying: c - Ex cathedra teach ndent study by using	piratory sy hal system testive systo patobiliar s docrine systices on exp vitro and in	estem  system  system  stem <b>Practi</b> perimental an vivo meth	animals, demonstrated ods	ations on students, ares and practical trainings,	
13.		vailable time:	, 50240	,	135 classes		
14.		zation of the course				retical course, practical	
17.	Organi	zation of the course			course	etical course, praetical	
						e individual learning	
15.	Forms	of teaching	15.1.	Theoretic	cal course	30 classes	
15.	activiti		13.11	Theoretic	our course	30 classes	
			15.2.	Practical course,		30 classes	
				Seminars	•		
16.	Other f	forms of activities	16.1.	Practice		/	
			16.2.	Individua	ıl tasks	/	
			16.3.	Individua	al (home) learning	75 classes	
17.	Metho	d of assessment			. <u>C</u>	•	
				disturbance systems	es of cardiovascula	ar, respiratory and renal	
					es of digestive, hep systems 18 - 30 po		
			F: 1	e 1.		18 - 30 points	
			<ul> <li>Final exam: final test + oral examination</li> <li>3. Final test: analysis of experimental models or tests for disorders detection</li> <li>6 - 10 points</li> <li>4. Oral exam: theoretical discution for the application of experimental models or tests</li> <li>6 - 10 points</li> <li>Complete exam - combination of the failled exam (written form) plus final test and final oral exam</li> </ul>				
	17.2	Seminar paper/project		l exam - c and final or		two failled exams plus final  min – max	
		(oral/written presentation)					

	17.3	Active participa	ition		ed to follow actively all g participation in the co to get signature		of				
				Pointing of student Theoretical course							
					nal exam is given accre sum of points obtained						
18.	Gradin	g criteria		up to 59	Î		(five) F				
		/ grade)		from 60 to 68	_		(six) E				
				from 69 to 76			even) D				
				from 77 to 84	points	8 (6	eight) C				
				from 85 to 92	2 points	9 (	nine) B				
				from 93 to 100	•		(ten) A				
19.		ement for		The student is r	equired to actively foll	ow all of the plan	ned				
	and tak	ing the fir	nal exam	activities.							
					iteria for assessment		•				
				_	a signature, the student		nımum				
				-	heoretical and practical		n tha				
				In order to take the final exam, the student should obtain the minimum points in the two continual assessments; If the							
				student has not obtained the minimum points in the continual							
				assessments, he/she will be obligated to pass them before the							
				final exam.	C	1					
20.	Langua	ge of inst	ruction	English							
21.			oring the		students to classes and and practical lessons.	interactive partici	pation				
22.	Textbo		ndatory								
	22.1		Vaskova	O, Miceva S, Pop Gjorceva	Special pathologica physiology	al RC Copy, Medical	2012				
			D, Miladi S, Majsto	nova D, Loparska rov V:		faculty, Skopje					
			Ristevska	O, Miceva S, Pop Gjorceva nova D, Loparska	Practical course for general and special pathological physiology	Boro Grafika, Skopje	2013				
		Add	ditional Gamulin S	S et all:	Pathophysiology	Jumena Zagreb	2014				
	22.2	2.	Tadzer I e	et all:.	General pathological physiology		1984				
	22.2	3.	McPhee S	J, Ganong WF:	Pathophysiology of disease. An introduction to clinical medicine	Langee medical Books/McGr aw-Hill, New York	2003				
1.	Name	of the si	ubject	PAT	HOLOGY 1						

	T				
2.	Code	MED-421			
3.	Study program	General med	licine		
4.	Organizer of the study program (Unit, Institute, Cathedra, Section)	UKIM – Medical Faculty Department of Pathology			
5.	Degree of education (first or second cycle)	Integrated c	ycle		
6.	Academic year / Semester	Third / V	7.	No. of ECTS credits	9
8.	Lecturer	Head of department: Liljana Spasevska *The lectures are conducted by all teachers at the department of Pathology			
9.	Conditions for enrolling the subject			f the profession as for enrolment	
10	Aims of the subject programs (	(~1-211~).			

## 10. Aims of the subject program (skills):

- The student will get to know the causes and general mechanisms of development of the diseases, as well as understand the structural and functional changes in the cells, tissues and organs by using the routine morphological and contemporary molecular techniques.
- While studing general pathology, the student will learn about the basic cellular and tissue responses to various pathological stimuli.
- In the special section, the sudent will learn the characteristic responses and changes during various pathological conditions of RES, cardiovascular and respiratory system.
- The student will learn the macroscopical and histological methods of analysis of the morphological changes in the organs, tissues and cells, based on which the diagnosis is established and therapy is planned.

### 11. Content of the subject program:

### Theory:

General pathology and part of the special pathology:

- Cellular injury, adaptations and death
- Hemodynamic disorders, thrombosis and schock
- Acute and chronic inflammation
- Tissue regeneration and reparation
- Specific inflammation
- · Genetic diseases
- Immunopathology
- Environmental and nutritional diseases
- Pathology of the neoplasia
- Pathology of the reticuloendothelial system
- Pathology of the cardiovascular system
- Pathology of the respiratory system

#### **Practical training:**

Learning the skills of microscopic analysis and diagnostics on histopathological slides, dissection and macroscopic analyses of surgical specimens, autopsy technique, interpretation of the changes with determination of the basic disease and immediate cause of death; altogether, practical application of the acquired theoretical knowledge.

12. **Methods of learning:** Interactive lecutres, practical excercises / seminars

13.	Total	time available				eoretical clas	1 credit= 270 ses, excercises classes home
14.	Distr	ibution of the ava	ailable ti	ime			
15.	Form activi	s of teaching ties	15.1	Lesson: theoret	s – ical lessons	75 classes	
			15.2	Exercis (labora semina work	tory),	Exercises: 6	50 classes
16.	Other	r forms of	16.1	Project	tasks	Facultative	
	activi	ties	16.2	Indepe	ndent tasks	Facultative	
			16.3	Home l	earning	135 classes	
17.	Evalu	ıation				points	
	17.1	Tests	Cont 2 Write Cover The 1. 2. 3. colle 1. T 2. S 3. G 4. In 5. E	inuous itten tests ring the f first col Cellular Hemody Acute ar oquium issue rege pecific inf enetic dis	following areasologuium: injury, adaptate and chronic inflate areation and relammation seases athology ental and nutrit	nowledge (on sof Pathologous and deathers, thrombosis ammation The eparation	colloquium): y 1: h s and shock ne second
		Final exam					min-max
			Oral j	•		points	13 - 23
			Pract	ical part <sup>,</sup>	<del>**</del>	points	13 - 23

	fields of pathology of system and respirator knowledge of patholog of the entire subject a (for grade 10=21-23 p 8=17-18 points; for 7=18 points; for 7=18 points; for grade 10=21-23 p histopathological slid analyses of surgical sp (for grade 10=21-23 p 8=17-18 points; for 7=18	ccording to the catalogue of c analysis and diagnosis of les, dissection and macroscopic pecimens.  coints; for 9=19-20 points; for =15-16 points; for 6=13-14 points)  at least the minimum points for in order to get the points from wise, the exam is considered to be
17.2 Seminar / project S (presentation: written and oral)	Seminar work	min - max 1 – 2 points
	classes): Attendance: 0.25 poi	nts nts nts s (24 groups of exercises lasting 4
18. Criteria for grading	Up to 59 points	5 (five) F
(points / grade)	from 60 to 68 points	6 (six) E
	from 69 to 76 points	7 (seven) D
	from 77 to 84 points	8 (eight) C
	from 85 to 92	9 (nine) B
	points from 93 to 100 points	10 (ten) A

19.	Conditions for signature and for taking the final exam	Conditional criteria: Conditions for a signature In order to get a signature, the student has to attend the theoretical lessons, practical excercises and the seminars, and to achieve at least minimum points (1+10 points).
		Conditions to take the final exam In order to take the final exam, the student has to

20. 21.	Teaching language  Method for monitoring the quality of lectures			achieve at least a minimum points for each of the periodical evaluations separately (12+12 points), or get at least 30% of the total number of points provided for continous check of knowledge (6+6 points); during the exam session the student must take an examination for the failed periodical evaluation(s) first, and afterwards the student may proceed to the final exam.  The final grade is formed according to the grading table, based on the sum of the points earned from all activities, continuous checks of knowledge and the final exam.  Macedonian  Student's anonymous evaluation of the subject, teachers and associates involved in the educational				
	ine qu	aurty O	1 10010105	proces		vorved in the cute	acionai	
22.	Litera			•				
			latory literat					
		No.	Autho		Title	Publisher	Year	
		1	Kumar V, C RS, Robbin Robbins		Basic Pathology. 7th ed.	W.B. Sounders Company,Pilade lphia	2003	
	22.1	2	Винај Н Абул Абас Нелсон Фа Ричард Мі	усто,	Основи на патологијата според Робинс	Табернакул	2010	
		3	Катедра патологија група авто		Избрани поглавја од Патологија 1	Медицински факултет, Скопје, УКИМ	2010	
		4	Катедра патологија група авто		Практикум за хистопатолошки вежби	Медицински факултет, Скопје, УКИМ	2008	
		5	. 11					
			ional literatu		m: il	D1.1' 1	37	
	22.2	No.	Autho Kumar V, Kotran Robins SL.	RS,	Title Osnovi patologije. 5 izdanje	Publisher Školska knjiga, Zagreb,	Year 1994	
		2	Kumar, Ab Fausto, Ast	bas,	Pathologic Basis of Disease, eight edition	Saunders	2010	

		3	Робинс и	Па	атолошки	Saunders	2006
			Котран	ат	лас	Elsevier	2010
						Академски	
						печат	
		4	Робинс и Котран	Па	толошка основа	Арс Ламина-	2015
				на	болестите - 8	публикации	
				ИЗ,	Д.	-	
		5					
1.	Title o	of the S	ubject		<b>PATHOLOGY</b>	2	
2.	Code				MED-421		
3.	Study	progra	ım		General Medicine		

4.	Organizer of the study program (Unit, Institute, Cathedra, Section)	UKIM-Medical Faculty Department of Pathology			
5.	Degree of education (first, second cycle)	Integrated cycle			
6.	Academic year / Semester	III/VI	7.	No. of ECTS credits	8
8.	Lecturer	Head of department: Liljana Spasevska *The lectures are conducted by all teachers at the			
9.	Conditions for enrolling the subject	department of Pathology  Passed first part of the professional exam Fulfilled conditions for enrolment in the VIth semester			

# 10. Aims of the subject's program (skills):

- To enable learning of the ethiopathogenetic mechanisms of the diseases.
- To enable to learning of the morphologic basis, macroscopic and histopathologic changes in tissues and organs in diseases of all systems.
- To train the students for morphologic diagnostics of the diseases, as well as to introduce the contemporary diagnostic techniques.
- To introduce the basic clinical manifestations of the diseases.

## **Content of the subject program:**

#### Theory:

Pathology by systems

- Pathology of the digestive system
- Pathology of the liver, gallbladder and pancreas
- Pathology of the urinary system
- · Pathology of breast
- Pathology of the endocrine system
- Pathology of the central nervous system
- Pathology of the genital system
- Pathology of skin
- Pathology of the locomotion system

#### **Practical training:**

Learning the skills of microscopic analysis and diagnostics on histopathologic slides, dissection and macroscopic analyses of surgical specimens. Learning the manual skills of autopsy including determination of the main disease, complications of the main disease, prior diseases and determining the cause of death.

**Learning methods:** Interactive lectures, practical exercises/seminars

13.	Total time available			hours 120 hours	o hours for 1 credit = 240 lectures, exercises eminars + 120 hours
14.	Distribution of the total	l time			
15.	Forms of teaching activities	15.1	Lecture theoret	es- ical teaching	60 hours
		15.2 Exercis (labora semina work		tory),	60 hours
16.	Other activities	16.1	Project	S	Facultative
		16.2	Indepe	ndent tasks	Facultative

			16.3	Homework	120 hours				
17.	Gradi point	0							
	17.1	Tests	Conti	minmax. Continous checks of knowledge* points 12 – 20					
			writte	en tests	owledge (colloquium): 2				
				ring the following area	s of Pathology 2:				
				first colloquium:					
				. Pathology of the dig	,				
			2.	.  Pathology of the bili	ary system and pancreas.				
			3.	. Pathology of the uri	nary system.				
				second colloquium					
			3. Pat	thology of breast					
			_	thology of the endocri	ne system				
			_	thology of the central	•				
			Stude	ents can obtain 12- 20	points from one colloquium				

	Final exam	minmax. Oral part* points 13 - 23 Practical part** points 13- 23
		*Oral part (integrative)- 2 questions from pathology of the genital system, skin and locomotory system, as well as integrative knowledge of Pathology 2 important for understanding of the entire subject and medical practice (for grade 10=21-23 points; for 9=19-20 points; for 8=17-18 points; for 7=15-16 points; for 6=13-14 points)
		**Practical part (according to the catalogue of skills): ): microscopic analysis and diagnosis of histopathological slides and autopsy or macroscopic analysis of surgical specimens including theoretical discussion about the topic concerned. (for grade 10=21-23 points; for 9=19-20 points; for 8=17-18 points; for 7=15-16 points; for 6=13-14 points)
		Thje student must get at least the minimum points for each part of the exam in order to get the points from the final exam. Otherwise, the exam is considered to be failed.
17.2	Seminar/proje ct (presentation: written and oral)	Seminar 1 - 2 points Presentation
17.3	Active	minmax.
	participation	Theoretical lessons* points 1 - 2 Practical lessons** points 10 - 12
		*Attendance at theoretical lessons Up to 35% o points 35%-70% 1 point 71%-100% 2 points

		a duration of 4 hours	** Practical exercises (24 groups of exercises with a duration of 4 hours): Attendance: 0.25 points Colloquium on missed exercise 0.25 points					
18.	Grading criteria	Up to 59 points	5 (five) F					
	(points /grade)	60 to 68 points	6 (six) E					
		69 to 76 points	7 (seven) D					
		77 to 84 points	8 (eight) C					
		85 to 92 points	9 (nine) B					
		93 to 100 points	10 (ten) A					

19.	signat	itions fo ture an g the fin	-	Condition for a signature In order to get a signature, the student has to visit the theoretical lessons, practical exercises and seminars, and has to achieve at least a minimum points (1+10 points)  Condition to take the final exam In order to take the final exam, the student has to achieve at least a minimum points for each of the periodical evaluations separately (12+12 points), or get at least 30% of the total number of points provided for continous check of knowledge (6+6 points); during the exam session the student must take an examination for the failed periodical evaluation(s) first, and afterwards the student may proceed to the final exam.						
				The final grade is formed according to the grading table, based on the sum of the points earned from all activities, continuous checks of knowledge and the final exam.						
20.		ing lan		Maceo			1			
21.			nonitoring f lectures	teache	Student`s anonymous evaluation of the subject, teachers and associates involved in the educational process.					
22.	Litera	ture		_						
		Mand	latory literat	ure						
		#	Autho	r		Title	Publisher	Year		
		1	Винај І Абул Абас Нелсон Фа Ричард Мі	аусто,		ови на ологијата ред Робинс	Табернакул	2010		
	22.1	2	Катедра патологија група авто	ра по огија –		рани лавја од ологија 1	Медицински факултет, Скопје, УКИМ	2010		
		3	Катедра патологија група авто	ри		ктикум за гопатолошки би	Медицински факултет, Скопје, УКИМ	2008		
		Addit	ional literatı							
		#	Autho		- ·	Title	Publisher	Year		
		1	Kumar, Ab Fausto, Ast		Basi	ease, eight	Saunders	2010		
	22.2	2	Робинс и		Пат	олошки	Saunders	2006		
			Котран		атла		Elsevier Академски печат	2010		
		3	Робинс и К	отран	Патолошка основа на болестите - 8 изд.			2015		
		4								
		5								
1.	Subject		<u> </u>			BASIC NUCLE	CAR MEDICINE			
2.	Code				MED 315					

3.	Study	Program		Ge	eneral Medicii	ne			
4.	Institu	-					ius Univ	versity, Medical	
	(Unit,	Institute, Chair, Dep	artment)		culty, Depar		of Patho	physiology and	
5.	Degree (first o	e of education or second cycle)		Int	egrated 6-yea	r study			
6.		year/semester			ird (III) / fth(V)	7.Num credits	ber of	1.5	
8.	Respo	nsible teacher		Pr	of. Olivija Va	skova, P	hD, MD		
9.	Precon	nditions		Obtained credits and passed final exam of Biophysics					
10.	• To t	ching goals: become acquainted w opharmaceuticals. get acquainted with r				-		-	
11.	Brief c	content:							
	• Race • Printer ther  Practi • Rou • The	sical bases of radioa liopharmaceuticals p nciples of radiotracer rapy of diseases.  cal lessons: utine procedures in de- application of radio sentation of the most	reparation s methods, etection an nuclides fo	and application, application a	cation. on of radionuc ement of radio	clides in o	diagnostio		
10	prod	cedures.					grupine	<u> </u>	
12.	Interac textboo	ods of studying: ctive teaching durin oks, visual studying,			computer-assi			study by using	
13. 14.		available time:			course, sen	ninars		e, practical	
15.	Forms	of teaching	15.1.	Theoret	15 classes - ical course	home in	dividual 20 class		
	detiviti		15.2.	Practica Seminar	l course,		10 class	ses	
16.	Other	forms of activities	16.1.	Practice					
			16.2.	Individu	ıal tasks				
			16.3.	Individu	ıal (home) lea	rning	15 class	ses	
	Metho 17.1	d of assessment Tests						min – max	
				d practical ical part of oncology 6-60 points					
					nination: integration of mufield				
			table,					to the grading otained in all of	

the activities.

5.	Educa	tional	degree	(first or	Integr	rated cycle					
			, ,		_	nemistry		-			
	_	_	air, Depart			•	Biochemistr		nical		
4.	<del> </del>		nstitution (	Unit,			of Medicine	<u> </u>			
3.		Progra	am		Gene	ral Medicir	ne				
2.	Code				MED						
1.	Subje	ct	1		BIO	CHEMIST	RY 1		I		
	22.2	1.		of Nuclear Med Expert Consult	dicine	Mettler F. A Guiberteau		Saunders, ISBN: 14557010		2012	
							anovska E:				
	22.1					Miladinov Loparska S	a D,	экорје,			
		1 ·	Iandatory . Basic nuc	lear medicine,		Vaskova C Miceva Ri Pop Gjord	stevska S,	Boro Grafika, Skopje,	200	8	
22.	Textbo		mg process	III UII OII O		<del>a praesioni r</del>					
21.			ning process			d practical l	asses and int essons	teractive pa	articip	ation	
20.		Language of instruction English Method of monitoring the Attenda									
			final exam	activities Conditio In order t points in	The student is required to actively follow all of the planned activities.  Conditional criteria for assessment of knowledge: In order to get a signature, the student should obtain minimum points in both theoretical and practical courses						
19.			or signature	TD1	. •		1 6 11	11 6.1			
				from 93		•				ten) A	
				from 8			ine) B				
				from 7'				ght) C			
	(points	/ grade)	)	from 6		_				en) D	
18.		g criteria			p to 59					ive) F	
					100%	5 points			6 - 1	0	
					.30% 70%	1 point 2 points	1-5				
		particij	pation	Theoretical							
	17.3	Active	;					]	min –	max	
		(oral/w									
		paper/p									
	17.2	Semina	ar						min –	max	

5.	Educational degree second cycle)	(first or	Integrated cyc	ele		
6.	Study year /semester		Second year /III	7.	Number of credits	7

8.	Responsible teacher	Prof. Jasna Bogdanska				
		The lectures are given by all members of the				
		Department of Biochemistry and Clinical				
		Chemistry				
9.	Preconditions:	Passed exam in Medical chemistry				

# 10. Teaching goals of the study program (competencies): The students have:

- ★ To learn and to define the different roles of the three different classes of macromolecules in the human body: proteins, carbohydrates and lipids as well as, the complex compounds build of these macromolecules:
- **→** To learn the structure and the transport trough the biological membranes;
- ★ To define the vitamins as the enzyme cofactors and as hormones (vitamin A and D)and antioxidants (vitamin E) and as anti-hemorrhagic compound (vitamin K):
- **→** To be informed about the 6 classes of the enzymes,
- ★ To understand the types of enzyme catalysis and the types of the catalyses, enzyme kinetics and inhibition of the enzyme reactions;
- ★ To understand the biosynthesis of the biological molecules (carbohydrates, proteins and lipids) and the catabolism to the final products; and to understand the regulation of the most important biochemical pathways;
- → To understand the role of ATP in the body and in the biological oxidation:
- **→** To understand the metabolism of haemoglobin;
- ★ To understand the respiratory chain, oxidative phosphorilation and ATP synthesis.

#### 11. Contents of the study program:

#### **→** Theoretical course:

- **→** Biochemistry of the cell
- ★ Chemical structure and function of the proteins , haemoglobin, myoglobin, amino-acid derivates
- → Carbohydrates as a compounds of the cell membrane, glycosaminoglycanes (hetero- polysaccharides of the extra cellular matrix), proteoglycanes, glycoproteins, glycolipids;
- → Lipids as a energy storage, as a membrane components, signals, cofactors and pigments;
- **→** Biological membranes and transport;
- ◆ Vitamins as the enzyme cofactors and as hormones (vitamin A and D) and antioxidants (vitamin E) and as anti-hemorrhagic compound (vitamin K); Michaelis-Menten- equation, Hill's equation; enzyme inhibition; alosteric and covalent modification of the enzyme activity;
- **→** General metabolism
- → Metabolism of carbohydrates: glicolisis glukoneogenesis, pentose-phosphate cycle, glycogenesis; glicogenolisis.
- **→** Tricarboxylic acid cycle, oxidative decarboxylation of piruvate.
- ♦ Metabolisam of lipids, beta oxidation of the fatty acids, metabolism of ketone bodies, fatty acids synthesis, cholesterol synthesis, phospholipids, glicolipids, cholesterol catabolism.
- Protein metabolism, the fate of nitrogen, urea synthesis, the fate of carbon chain of the amino acids, synthesis of the non-essential amino acids, amino acid derivates, regulation of the metabolic pathways. → Hemoglobin Metabolism
- ★ Respiratory chain, oxidative phosphorilation and ATP synthesis.

	Practical course:  → Plasma proteins separation techniques, lipoprotein separation tecniques (electrophoresis), carbohydrates separation techniques (chromatography). → Michaelis-Menten- equation, pH optimum and temperature optimum;  → Quantification of several biochemical parameters like vitamins, proteins, carbohydrates and lipids in human serum.									
12.	Meth	ods of studying: int	teractiv	e lectures	, group work, e	xercises, semi	nar paper.			
13. 14.		no. of hours: bution of the avail	able tiı	me	210 hours					
15.		of educational	15.1	Lecture course Practica	ls (laboratory,	45 hours				
16.	Other	types of	16.1	clinical) seminar work Project	•	12 hours				
	activi	ties	16.2 16.3	Individu Home s	ıal tasks	105 hours				
17.	points	Assessment of knowledg points  17.1 Tests								
	17.1	Tests		2 Contin • T • T		minmax. total points 6 -10 6 - 10				
		Final exam		Practica		1	points minmax. 12 - 20			
	17.2	Seminar work/pro (presentation: wri and oral)		Oral exa	21 - 35 minmax. 1-3 points					
	17.3	Active participation	on	Theoret: Practica	ical course l course		minmax. points: 1-5 points: 13-17			
18.	Know	ledge assessment		up to 59			5 (five) F			
		a. ts/grade)		60 to 68 69 to 76	•		6 (six) E 7 (seven) D			
				77 to 84	-		8 (eight) C			
				85 to 92	-		9 (nine) B			
19.		ia for obtaining a ure and taking the exam	Con orde succ parti	93 to 100 points 10 (ten) A  Conditional criteria for assessment of knowledge: I n order to get a signature that the course has been successfully finished the students are requested to actively participate in th theoretical course (min 1 point) practical course (the student has to be present on all the lectures) and seminars (minimum 1 point).						
20.	Langu	age of the course	Engl	lish						
21.	Metho	od for evaluation of	Ano	nymous st	tudent's evaluat					
	the qu	ality of education	and	collaborat	ors involved in	the education	al activities			

22.	Literat	ture							
		Mand	atory textbooks						
			Author		Title		Publisher	Year	
	22.1	1	Robert K. Merey and all.		arper's Illustrat ochemistry	ed	ISBN-13: 97800716259 13	2006	
		2	David. L. Nelson		Lehninger Principles of Biochemistry		ISBN-13: 97814641261 16		
		Addit	ional literature	Dī	oenemsu y		10	1	
		110010	Author		Title		Publisher	Year	
	22.2	1	Michael Lieberman	Mark's Basic Medical Biochemistry			Lippicott Williams &	2013	
1.	Cubic	ot.		В	BIOCHEMIST	CTI	Wilkins	<u> </u>	
2.	Subje Code	Ci			MED-221	511	KY Z		
3.		Ducan			General medi	oine			
4.		Progr	anı İnstitution ( Unit,		UKIM-Faculty of Medicine				
4.		_	air, Department)		Department of biochemistry and Clinical Chemistry				
5.		ational d cycle	degree (first	or	1_				
6.	Study	year /	semester		Second/ IV	7.	Number of credits	6	
8.	Responsible teacher			Prof. Jasna Bogdanska The lectures are given by the professors, members of the Department of Biochemistry and Clinical Chemistry.					
9.	Preco	nditior	ıs:		Signature from Biochemistry 1				

# 10. **Teaching goals of the study program (competencies):** The student has:

- → To know to recognize the basic chemical structures of the nucleic acid bases, of nucleotides and of nucleosides (both ribo-and deoxyribo-forms);
- → To describe the flow of genetic information (DNA→ proteins); naming the three types
  of RNA and their roles
- **→** To learn about the digestion and absorbtion of nutrients;
- → To learn about plasma proteins, immunoglobulins, biochemistry of the blood count elements,
- ★ To learn and explain the metabolism of water and electrolytes.
- **→** To describe signal transduction
- → To define hormones and hormone cascade system; introducingpeptide, amino acidderived hormones and steroid hormones and their role in signal transducing.
- + To be informed about the translocation of proteins in different cell compartments
- ★ To know to describe and explain the metabolic processes in the: kidney, liver, muscle, bone, blood, nervous system.

# 11. Contents of the study program:

#### Theoretical course::

- → Nucleic acid bases, of nucleotides and of nucleosides (both ribo-and deoxyribo-forms);
- ★ Structure and function of the nucleic acids, protein synthesis, protein degradation, gene expression regulation;
- → Signal transduction, second messengers, tyrosine kinase, G-couopled protein receptors, JAK-Stat kinase, protein kinase G.

- → Hormones, definition, chemical structure, biosynthesis, transport, degradation, mechanism of action, physiological effects.
- **→** Nutrition
- **→** Water metabolism, elektrolytes and acid-bas balance.
- **→** Translocation of the proteins, importunes and exportines;
- → Plasma proteins, immunoglobuline(s) and biochemical processes in the erythrocytes, leucocytes, thrombocytes, hemostasis.
- → Biochemistry of different tissues: Liver, Kidneys, Nervous system; Extracellular matrix, collagen, elastin, laminin, bone, cartilage; Biochemistry of the muscle tissue and cytoskeleton.
- **→** Free radicals and metabolism of xenobiotics.

#### **→** Practical course:

- → Qualitative determination of DNA in the tissue sample of the experimental animal(s);
- → Quantification of the urea, acidum uricum, creatinine in human plasma and urine samples;
- **→** Quantification of bilirubin in human serum;
- **→** Quantification of electrolytes in human serum;
- **→** Qualitative and quantitative analyzes of urine samples;
- $\star$  4 20 % SDS-PAGE as a technique of the separation of proteins in urine.

12. **Methods of studying: :** class room oriented lectures, interactive lectures, group work, practical training, seminar paper.

13.	Total no. of hours:		180 hours	
14.	Distribution of the avail	able tin	ne	
15.	Type of educational	15.1	Lectures-theoretical	35 hours
	activity		course	
		15.2	Practicals (laboratory,	39 hours + 6 hours of
			clinical),	Seminars
			seminars, team	
			work	
16.	Other types of	16.1	Project assignments	
	activities	16.2	Individual tasks	
		16.3	Home studying	75 hours

# 17. Assessment of knowledge:

points	sment of knowledge:					
17.1	Tests		minmax.			
		2 Continuous tests	points			
		• Test 1:	9-15			
		• Test 2	9-15			
	Final exam	Subject: Biochemistry 2				
			minmax.			
		Practical exam (Test)	9-15points			
		Oral exam	21-35 points			
17.2	Seminar work/project		minmax.			
	(presentation: written and oral)	Seminar works	1-3 points			

	17.3	Activ	e participati	on						inmax.	
						oretical course				points 1-5	
					1	tical cours	e			points 10-12	
18.	Know	ledge a	ssessment		up to	59 points				5 (five) F	
					.0	70				( ( ' ) E	
	criteri	a: ts/grade	,			68 points				6 (six) E	
	(pom	is/graut	5)			76 points 84 points				seven) D	
						2 points		8 (eight) C 9 (nine) B			
						00 points		ten) A			
19.	Criter	ia for o	btaining a	1		-	for as	ssessment of kno		· /	
17.			taking the					at the course has		B	
	final e		<u> </u>		_	_		udents are reques		actively	
				participate in the theoretical course (min 1 point) practical							
					course (the student has to have 100% presence) and						
						ninimum 1	-		E	.1£1 4b.a	
								am the student ha ell as to pas the v			
				with 6			as w	en as to pas the v	VIIIICI	CAUTIS	
							al ex	amination is inde	pende	ent and is	
						-		ined 60% of the t	-		
				of the	-		_				
								ecording to the ta		om the	
				score	of tot	al planed a	Ct1V1t1	ies taken into acc	count.		
20.	Langu	age of	the course	Englis	sh						
21.	Method for evaluation of Anonymous student's evaluation of the subject, teachers										
	the qu	ality of	education	and co	llabo	rators invo	lved	in the educationa	l activ	vities	
22.	Litera										
		Mand	atory textbo			m: 1		D 11' 1		37	
		1	Author V		Ham	Title	ot a d	Publisher ISBN-13:		Year 2006	
		1	Robert K. and all.	Merey		chemistry	ateu	9780071625		2000	
	22.1		and an.		Dioc	inclinisti y		913	023		
		2	David. L.	Nelson	Lehi	ninger		ISBN-13:			
						ciples	of	9781464	1126		
					Bioc	hemistry		116			
		Addit	ional literati				- 1				
	22.2		Auth	or	3.5	Title		Publisher		Year	
	22.2	1	Michael		Mar Med	k's Basic		Lippicott Williams &		2013	
			Lieberman	1		chemistry		Wilkins &			
1.	Subjec	t			שוטנע	PHYSIOI	LOGY				
2.	Code					MED 213					
3.		Progran	1			General M	[edicii	ne			
4.	Institut		C1 : 5					Methodius Uni	versity	, Medical	
			c, Chair, Depa	artment)		-		ment of Anatomy			
5.	Degree		education d cycle)			Integrated	o-yea	ır stuay			
6.		year/ser				First (I) /		7.Number of	11		
						First (I)		credits			
8.		nsible t	eacher			v		ncevska, PhD, MD			
9.	Precon	ditions						passed exam) from	_		
						and physic 1, Anatom		of cell, Histology and 2	and Er	nbryology	
						1, Anatom	y 1 al	IU 4			

- Teaching goals: 10. • To gain insight in functional organization of the human body and to be able to:
  - Define homeostasis and to explain the mechanisms of maintenance of the constancy of the internal environment.
  - Define the functions of every system in the body, to explain the mechanisms through which they are achieved and to connect them with morphological structure
  - Understand and interpret the relations between different body systems
  - Predict and explain integrated responses of the systems during physiological effort Perform certain practical procedures

#### 11. Brief content:

#### **Theoretical course:**

- •Functional organization of the human body, mechanisms for maintaining consistency of the internal environment; feedback and regulation of functions of the body.
- •Physiology of skeletal and smooth muscles
- •Physiology of heart, cardiac cycle, heart tones, heart rate; physiology of circulation, arterial and venous system; microcirculation and lymphatic system, control mechanisms of regulation of circulation, regulation of blood pressure.
- •Physiology of body fluids and their regulation.
- •Physiology of the urinary system
- •Physiology of blood, blood elements, blood hemostasis and coagulation.
- Physiology of the respiratory system
- Physiology of the gastrointestinal system
- Physiology of metabolism, metabolic processes of carbohydrates, fats and proteins, physiological regulation of energy balance, basal metabolism, diet.
- •Physiological functions of the liver.
- •Skin physiology, thermoregulation, body temperature.
- •Activity of the organism under specific conditions, sports physiology, sports impact on bodies and systems, functioning of the organism in extreme environmental conditions: high altitude and great depths.

#### **Practical lessons:**

- •Examination of the activity of the muscles, testing the activity of the heart muscle in experimental animals and the influence of various factors on the heart; bioelectrical currents in humans and electrocardiography.
- •Examination of blood and blood components (red blood cells, white cells and platelets), determination of blood groups and test methods for hemostasis.
- •Examination of respiratory function (functional testing).
- •Examination of the function of the gastrointestinal system (determination of acidity of gastric juice and the action of digestive enzymes).

#### 12. **Methods of studying:**

Interactive teaching during lectures and practical trainings, independent study by using textbooks, practical exercises on experimetal animal models and virtual models with computer-assisted learning.

13.	Total available time:			330 classes			
14.	Organization of the course			150 classes - theoretical course, practical course, seminars			
				180 classes - home individual learning			
15.	Forms of teaching activities	15.1.	Theoretic	cal course	75 classes		
		15.2.	Practical	course,	75 classes		
			Seminars	3			
16.	Other forms of activities	16.1.	Practice				

16.2. Individual tasks 16.3. Individual (home) learning 180 classes 17. Method of assessment

	17.1	Tests	Continual assessment - 3 (		– max
			Continual assessment - 5 (	written)	
			Physiology of blood	d and 9-15 p	points
			respiratory system • Physiology of musc circulatory system	ele, heart 9-15	and
			Physiology of the usystem, body fluids gastrointestinal system	and	i
				n): liver metabolism,	ination +oral
			thermoregulation, physiology in special condit 15 points	siology of sport and cions 9 -	
			2. Practical and oral practical procedures and integrative knowledge of the learnt in Physiology 1.	ne whole material	-23 points
			The grade in the fin grading table, and on the all of the activities.	al exam is given accordi basis of the sum of poin	
	17.2	Seminar paper/project (oral/written presentation)	1 - 3		min – max
	17.3	Active participation	Theoretical course Practical course		min – max 1-3 8 - 11
			Completed textbook		mandatory
18.		ng criteria s / grade)	up to 59 points		5 (five) F
	(ponits	s / grade)	from 60 to 68 points from 69 to 76 points		6 (six) E 7 (seven) D
			from 77 to 84 points		8 (eight) C
			from 85 to 92 points		9 (nine) B
			from 93 to 100 points		10 (ten) A
19.		rement for signature king the final exam	The student is required to activities.	·	•
			Conditional criteria for		_
			In order to get a signatur points in both theoretical		
			a seminar paper;	and practical courses, t	ina to present
			In order to take the final	exam, the student shoul	d obtain the
			minimum points in the tl		
			student has not obtained assessments, he/she will		
			final exam.	be obligated to pass the	in before the
20.		age of instruction	Macedonian		
21.		d of monitoring the	Attendance of students to		
	quality	of teaching process	in theoretical and practic evaluation of the subject in the educational activit	, teachers and collaborat	
22.	Textbo	ooks			
	22.	1. Mandatory			

1.	Guyton AC, Hall JE.	Textbook of Medical	Elsevier,	2011
		Physiology 12 th	London,	
		edition.		
2.	Dejanova B, Petrovska S,	Physiology of certain	Medical	2012
	Todorovska L.	organ systems.	Faculty,	
			Skopje	
3.	Costanzo LS.	Physiology	Elsevier,	2006
			London,	

		4.	Efremovska Lj and all.	P	racticum	in	Medica	al	2012	
				P	hysiology 1.		Faculty	-		
							Skopje			
		Ado	ditional							
		1	Widmaier E, Raff H, Strai	13	Vander's H	uman	McG	McGraw -		
			K.		Physiology	: The	Hill			
	22.2				Mechanism	ns of	Educ	ation		
	22.2.				Body Func	tion.				
1.	Subject			PH	YSIOLOGY	Z <b>2</b>	•			
2.	Code			ME	D 222					
3.	Study Progr	ram		General Medicine						
4.	Institution			Ss Cyril and Methodius University, Medical						
	(Unit, Instit	ute, (	Chair, Department)	Faculty, Department of Anatomy						
5.	Degree of e	duca	tion (first	Inte	grated 6-year	r study				
	or second c	ycle)								
6.	Study year/	seme	ster	Firs	st (I) / First	7.Numbe	r of	6		
				(I)		credits				
8.	Responsible teacher			Prof. Sanja Mancevska, PhD, MD						
9.	Preconditions			Signature from Physiology 1						
10.	Teaching	goal	ls:							

#### 10. Teaching goals:

- To gain insight in the regulatory systems of the human body and to be able to:
- Define the functions of the nerve system, sensory senses and endocrine system, to explain the mechanisms through which they are achieved and to connect them with morphological structure.
- Understand and interpret the interrelations between the nerve and endocrine system and their relations with other organ systems.
- To explain integrated responses of the regulatory systems during the maintenance of the normal function of the human body
- Perform certain practical procedures

#### 11. Brief content:

#### **Theoretical course:**

- Physiology of the nervous system, neuron, nerve impulse, synapses, neurotransmitters and nevromodulatori.
- Physiology of sensory system, receptors, neural pathways, sensory cortex, somatic sensations, sense of touch and position; sense of vision; sense of hearing; sense of balance; sense of taste; sense of smell; sense of pain.
- Physiology of the motor cortex, basal ganglia, cerebellum, brainstem, spinal cord, vegetative spinal reflexes, physiological functions of the autonomic nervous system.
- Physiology of the reticular formation and physiology of the limbic system and hypothalamus.
- Endocrine physiology and physiological mechanisms of action of hormones of the endocrine glands: pituitary, tireoidea, parathyroid glands, endocrine pancreas, adrenal glands.

#### **Practical lessons:**

- Measurement of body temperature and basal metabolism.
- Examination of the peripheral nervous system in experimental animals, its excitability
  and conduction; examination of clinically important human reflexes; examination of the
  sense of vision, sense of sound and balance, sense of taste and smell; methods of brain
  activity.
- Examination of the autonomic nervous system.

	• Examination of the functions of the endocrine glands in experimental animals.								
12.	Methods of studying: Interactive teaching during using textbooks, practical exists with computer-assisted learning textbooks.	exercises o							
13.	Total available time:			180 classes					
14.	Organization of the course			90 classes - theoretical course, practical course, seminars 90 classes - home individual learning					
15.	Forms of teaching activities	15.1.	Theoretic	cal course	45 classes				
		15.2.	Practical Seminars		45 classes				
16.	Other forms of activities	16.1.	Practice						
		16.2.	Individua	al tasks					
		16.3.	Individua	al (home) learning	90 classes				
17.	Method of assessment								

1	17.1	Tanta			
	17.1	Tests	Continual assessment - 2 (	min – max <b>written</b> )	X
			Physiology of per- and central nervou	-	oints
			<ul> <li>Physiology of sen</li> </ul>	•	oints
				of mood, emotion and state of	
				tellectual functions.	01
			awareness, and m	tenectual functions.	
			examination	itten) + practical examinatio	on +oral
			<b>1.</b> Final test (written): physiology of endocrin	ne 12 - 20 po	ointe
			physiology of endocri	ne 12 - 20 pc	JIIUS
			<b>2.</b> Practical and oral expractical procedures and	camination: certain	
			integrative knowledge of th	e whole material	
			learnt in Physiology 2.	14-23 po	oints
				al exam is given according to basis of the sum of points obta	
	17.2	Seminar		min	– max
		paper/project	1 - 3		
		(oral/written			
		presentation)			
	17.3	Active		min	– max
		participation	Theoretical course		1-3
			Practical course		8 - 11
10	C 1:		Completed textbook		ndatory
18.		ng criteria s / grade)	up to 59 points from 60 to 68 points		5 (five) F
	(points	s / grade)			5 (six) E
			from 69 to 76 points		seven) D
			from 77 to 84 points		(eight) C
			from 85 to 92 points		(nine) B
19.	Requir	rement for signature	from 93 to 100 points  The student is required to	o actively follow all of the pla	0 (ten) A
		king the final exam	activities.	, J	
				assessment of knowledge:	
			In order to get a signatur	e, the student should obtain m	inimum
			points in both theoretica a seminar paper;	l and practical courses, and to	o present
				exam, the student should obta	
			_	rree continual assessments; I	
				the minimum points in the co	
			assessments, he/she will final exam.	be obligated to pass them before	ore the
20.		age of instruction	Macedonian		
21.		d of monitoring the		o classes and interactive partic	_
	quality	of teaching process		al lessons and anonymous stu	
				, teachers and collaborators in	volved
22	Torrell	noles	in the educational activit	ICS	
22.	Textbo	JOKS			

22.1.

Mandatory

		1.	Guyton AC, Hall JE.		Pł	extbook on the contract of the		ical	Elsevier, London,	201	1
		2.	Maleska V, and all.		Practicum in Physiology 2.			in	Medical Faculty, Skopje	201	2
		3.	Costanzo LS.		Pł	nysiology	7		Elsevier, London,	200	16
		4.	Despopoulos A, Silbernagl S.		Color atlas of Physiology.			of	New York	200	)3
		Ado	ditional								
	22.2.	1	Widmaier E, Raff H, St K.	trang				The			2013
1.	Subject			BASICS IN HUMAN GENETICS							
2.	Code				ED	124					
3.	Study Program				nei	al medi	cine				
4.	Organizing Institution ( Unit,						-	ledicin	e Cathedra		
			r, Department)			nan gene					
5.	Education second cyc		degree (first or								
6.	Study year	r /sei	mester	firs			Num	iber of		5	
8.	Responsib	le te	acher	Ch	ief	of the c	athedra	ae - Pr	of d-r Elena	ì	
						arova-Aı	_				
									oy all memb	ers o	of
-						athedra (				•	-
9.	Preconditi	ions:							the morphol	logy	and
10	T		£ 41 4 1			ology of		:11			
10.	<ul> <li>Teaching goals of the study program (competencies):         <ul> <li>Training the students about the basic genetic principles that influence medical practice</li> <li>Training the students regarding basic principles of cytogenetics, molecular genetics, biochemical genetics, population genetics, reproductive genetics and genetics in forensic medicine</li> <li>Educating the students on basic principles in communication with families with genetic disorders and malformations</li> </ul> </li> </ul>										
	• Trainin	g the	students about basic ethi	ical p	rın	ciples in	genetic	CS			

# 11. Contents of the study program: Theoretical course:

- Basics of human genetics organization of prokaryotic and eukaryotic DNA, nuclear and non-nuclear DNA, basic processes of replication, transcription and translation, regulation of gene expression and signaling, gene mapping in prokaryotes and eukaryotes, recombinant DNA cloning, basics of cytogenetics, chromosome organization, frequent chromosomal aberrations, cell cycle and mitotic and meiotic division, and errors in their behavior, cellular and molecular basis of heredity, Mendelian genetics, nonmendelian inheritance complex and multifactorial inheritance genetic factors in common diseases. Mapping and identification of genes for monogenetic diseases. Developmental genetics and processes that disrupt embryonic development. Mutations- types, ways of occurrence and systems for repair of the DNA. Molecular and biochemical basis of genetic diseases. Basics of onkogenetics and immunogenetics. New technologies and future possibilities for gene therapy. Prenatal and postnatal genetic testing of inherited and genetic conditions, ethical aspects of genetic examinations. Practical course:
- Methods of genetic analysis DNA extraction, methodts for detecting of known and
  unknown mutations and polymorphisms. Methods of writing and interpretation of the
  results. Basics in cytogenetics performing karyotype, staining methods, FISH, detection
  of chromosomal aberrations. Interpretation of the mendelian and nonmendelian
  inheritance, interpretation of the types of the mutations, oncogene changes. Screening
  methods in the population-methods and organisation.
- Basics in dysmorphology and clinical recognition of the syndrome and multimalformations, methods for prenatal and postnatal detection of malformations, genetic counseling.

12.	<b>Methods of studying:</b> In	ntegrated	d lecturers	s, practical tutor	rials/seminars
13.	Total no. of hours:			150 hours: 3	30 theoretical lecturers, 30
				practical tutor	rials, 90 hours home learning
				and seminar v	vork
14.	Distribution of the avai	lable tir	ne		
15.	Type of educational	15.1	Lectures-theoretical		30 hours
	activity		course		
		15.2	Practica	ls (laboratory,	30hours
			clinical)	,	
			seminar	s, team	
			work		
16.	Other types of	16.1	Project a	assignments	depending on the interest
	activities				of student /hours
		16.2	Individu	ıal tasks	depending on the interest
					of student /hours
		16.3	Home st	tudying	90 hours
1.7					•

# 17. **Assessment of knowledge:**

points								
17.1	Tests	3 Continuous tests	t	total points				
			min	max				
		Colloquium 1	5	15				
		Colloquium 2	5	15				
		Colloquium 3	7	20				
	Final exam		min	maks				
		Theoretical test	30	50				

					Oral exam		21	36	
					If the student pa	asses al	13 continuous	tests v	with
					minimal points	•			
					tests), he can pa	ss dire	ctly on the ora	l exan	ı
	17.2 \$	eminar	work/project					mir	nmax.
		(prese	entation: written S	Sen	ninar works			poi	nts and
		oral)							
	17.3	Activ	e participation					mi	nmax.
					Theoretical cour	rse		po	ints 1-3
					Practical course				ints 4-7
18.	Know	ledge a	ssessment up to	59	points 5	(five)	F criteria:	60 to	68 point
	6 (	six) E	(points/grade)		69 to 76 points	7	(seven) D		
					77 . 04			0	( : 10) (
					77 to 84 points				(eight) C
					85 to 92 points				(nine) B
10	G :		14 : : : : :		3 to 100 points				0 (ten) A
19.	1		_		onal criteria foi			U	1
	-		taking the For g	_	0	e stude	ent s are oblid	ged to	attend fina
	exam	pra	actical teaching w		*	41	. 1 . 1	1.1	
					cess to the oral e			-	
					cted continuous			nımum	1 60% 01
			*		s from the writte			ordina	to the
					valuation of the mentioned scor	-		_	
					activities.	mg, oa	sed on the sun	1 01 111	e ponits
20.	Langu	lage of	the course Mace						
21.		•	valuation of Anor			valuat	ion of the sul	hiect	teachers th
	1		ucation and c	-				-	
22.	Litera								
	Bittera		atory textbooks		T		T		
			Author		Title		Publishe	r	Year
		1	Prof d-r M.	I	Medical genetics	·	Iniversity 'Cui		2013
		-	Kocova and		and Methodius'		, ,		
		2	Doz d-r A.		Authorized		014		
		_	Petlickovski	-	lecturers	_			
		3	Prof d-r M.	1	Practicum of U	niversi	v 'Curil 2009	22.1	Spiroski
			human genet			lethodi	1 -		Spirosin
			Tomas gones					culty,	
							Skopje		
		4	Проф Лр М.	Pra	acticum of Univ	versity	1.5	Кочов	а и humai
					ethodius' copaco	•	1		
			8				Skopje	) ,	
							anopje		
		Addit	ional literature						
		Tagar	Author		Title		Publishe	·	Year
			7 tutnor		Title		T donsile	<b>1</b>	1 car
			T		1		ı		
		1	Mueller, R.F. ar	nd	Emery's Elem	ents	Elsiever		1998
			Young, I.D.		of Medical				
					Genetics. 10 <sup>th</sup>	ed.			
	22.2		Change 1 T. D.	۲ ای			O	1 -	2007
	22.2	2	Strachan T, Rea	aa F	<b>l</b> uman Molecula	ır " ed.	Oxford journ	iais	2007

A Genetics 4

Gardner RM, Chromosome Oxford University 1996 Sutherland Press genetic counseling,

2<sup>nd</sup> ed

		4	Nussbaum, McInnes, Willard	n	nomson&Thom Genetics edicine	so in	Elsiever	2007		
		5	Peter Russel	IC	Genetics 3rd ed.	•	Benjamin Cummings	2011		
1.	Subject				BIOPHYSICS					
2.	Code				MED-116					
3.	Study	Progra	am		General Medi	cine				
4.			nstitution ( Unit,			•	Medicine Chair			
	Institu	ıte, Ch	air, Department)		in Medical Ph	ysic	S			
5.	Educational degree (first or second cycle)				Integrated cycle					
6.	Study	year /s	semester		First/First	7.	Number of credits	2		
8.	Respo	nsible	teacher		Assistant Professor Dr Tomislav Stankovski					
9.	Preco	ndition	s:		/					
10.	Teach	ing goa	als of the study prog	ran	n (competencie	es):				
	•		rn the basic laws of I	•						
	•		derstand the processe	es of	f the living orga	anisn	ns that can be desc	ribed by		
			ophysics models;							
	•		rn the basic laws of r							
	•		rn about the electrica			ces,	as well as their occ	currence		
	•		oplication in living or arn the basic character			zino	and Ionizing radiat	ion and		
			ise in Medicine.	11011	S OI TION TOWN	ing .	and romeing radial	ion und		

#### 11. Contents of the study program:

- Biophysics basics and system theory
- Biomechanics
- Biophysics of fluids
- Bioacoustics
- Optics
- X-ray and nuclear radiation
- Thermodynamics
- Electrical forces
- Electromagnetism

#### **Theoretical course:**

- Biophysics basics. Divisions in Biophysics. System theory. System control. Important theories.
- Basics of biomechanics. Levers of the locomotor system. Work and power of the man. Mechanical work of the heart. Elasticity. Bone fractures.
- Fluids and their characteristics. Liquid viscosity. Hydrodynamics. Physical model of the blood vessels. Surface tension of liquids. Atmospheric pressure. Mechanics of breathing.
- Bioacoustics. Oscillations and waves. Sounds waves. Ultrasound. Application of sound in Medicine.
- Basic geometric laws in optics. Optical instruments. Eye as an optical instrument. Infrared light. NIRS method. Thermography. Ultraviolet light. Quantum optics. Lasers.
- X-ray radiation. X-ray spectra. Application of X-ray in Medicine. Computer Tomography. Nuclear physics and nuclear reactions. Nuclear Medicine basics. SPECT and PET methods. Hybrid SPECT-CT methods.
- Thermodynamic processes. Biological open systems. Physiological effect of heat on human body.
- Electrical forces. Electrostimulation. Heart Bypass. Biopotentials and electrophysiology.
- Basics of electromagnetism. Electromagnetic induction. Magnetic resonance.

#### **Practical course:**

- Basics of measuring physical quantities: measuring length.
- Electrical forces and Ohm law of electrical circuit.
- Concentration measurement with Abbe refractometer.
- Concentration measurement with Polarimeter of light.

10							
12.	Methods of studying: The	neoretica	al lectures	and lab experi	mer	nts	
13.	Total no. of hours			60 hours			
14.	Distribution of the available time						
15.	Type of educational	15.1	Lectures-theoretical		21	hours	
	activity		course				
		15.2	Practicals (laboratory,		9	hours	
			clinical),				
			seminars, team				
			work				
16.	Other types of	16.1	Project a	assignments	/	hours	
	activities	16.2	Individual tasks		/	hours	
		16.3	Home st	udying	30	hours	
17.	Assessment of knowledge	ge:					
	points						
15.	Type of educational activity  Other types of activities  Assessment of knowledge	15.1 15.2 16.1 16.2 16.3	Lectures course Practica clinical) seminars work Project a Individu	ls (laboratory, , s, team assignments al tasks	9 / /	hours hours	

	17.1	Tests				minmax. 2		
				Continuous test	S	36 - 60		
		Final exam				minmax.		
				Oral (written) e	xam	18 - 30		
	17.2	Seminar work/pro	ject			minmax.		
		(presentation: wri	(presentation: written and oral)			/		
	17.3	Active participation	on			minmax.		
				Theoretical cou	rse	0 - 1		
				Practical course		6 - 9		
18.	criteria:			up to 59 points		5 (five) F		
				60 to 68 points	6 (six) E			
	(poin	ts/grade)		69 to 76 points	7 (seven) D			
				77 to 84 points		8 (eight) C		
				85 to 92 points		9 (nine) B		
				93 to 100 points		10 (ten) A		
19.	Criter	ia for obtaining a	Con	Conditional criteria for assessment of knowledge:				
	signat	ure and taking the	Only	Only one absence is permitted for obtaining a signature.				
	final e	exam	The	The two continuous tests are taken only during the				
					e needs to go to the			
			writt	en and the oral te	st are taken either	during the		
			lectu	res or on the full	final exam. In eith	ner case, to pass		
			the subject one needs to get at least the minimum					
			required points.					
					I points, the grade			
			acco	rding to the table	of grades (given a	above).		

20.	Langu	age	of the course	English							
21.	Metho	d fo	r evaluation of	Anonymo	ous evaluation	taken	by the students	, of			
	the qu	ality			ct, teachers an ational activitie		oorators involved	d in			
22.	Litera	ature									
		Ma	ndatory textbook	S							
			Author		Title		Publisher		Year		
	22.1	1	T. Stankovski	Biophy materia	sics – internal ls		Faculty Medicine	of	2015		
		2	N. Andonovska	Biophy	sics		UKIM		2005		
		3	D. Gersanovski	Biophy materia		nternal	Institute Physics	of	2006		
		Additional literature									
			Author		Title		Publisher		Year		
	22.2	1	W. Bialek	Biophysics: Searching for Principles			Princeton University Press	2	012		
		2	T. Stankovski	Tackling the inverse problem for nonautonomous systems: Application to life sciences			Springer	2	013		
1.	Subjec	t	I	11	CELL PHYSIOLO	MOI	RPHOLOGY		AND		
2.	Code				MED 112						

3.	Study Program	General Medicine						
4.	Institution (Unit, Institute, Chair, Department)	Ss Cyril and Methodius University, Medical Faculty, Department of Anatomy						
5.	Degree of education (first or second cycle)	Integrated 6-year study						
6.	Study year/semester	First (I) / 7.Number of 5 First (I) credits						
8.	Responsible teacher	Prof. Sanja Mancevska, PhD, MD						
9.	Preconditions	None						
		·						

#### 10. Teaching goals:

- Gaining knowledge on the building concept of a cell's structural components and structure and function interconnection
- Gaining knowledge on evident morphological changes manifested during the process of mitosis, meiosis and cell apoptosis.
- To recognize the cell as a functional unit, to study the functions of individual cellular structures and systems, as well as the interaction of the cell with the environment.
- To learn about the cellular production processes, cellular information processes and control mechanisms that enable their physiological function.

#### 11. Brief content:

#### **Theoretical course:**

- Basic structure and function of prokaryotic cells
- Eukaryotic cells:
- Morphological characteristics of the cell in mitosis, meiosis and apoptosis.
- Morpholocical specificities of different cell types
- Function of the cell, the cell's environment and its behavior (motility and communication with the environment and with other cells).
- Function of cellular physiological systems.
- Functions of the nucleus and cell organelles.
- Cell information processes and their regulation.
- Cell replication and development.
- Specialized cell systems.

#### Practical lessons:

- Basic structure and function of prokaryotic cells
- Eukaryotic cells: Plasmaleme, glycocalix, organellae and nucleus morphology;
- Morphological characteristics of the cell in mitosis, meiosis and apoptosis.
- Morpholocical specificities of different cell types
- Transport through cell membrane
- Functions of the nucleus and cell organelles.
- Intercellular communication
- Specialized tissues (muscle and nerve cell)

#### 12. **Methods of studying:**

Interactive teaching during lectures and practical trainings, independent study by using textbooks, practical exercises on experimetal animal models and virtual models with computer-assisted learning.

13. Total available time: 150 classes

14.	Organi	Organization of the course			60 classes - theoretical course, practical course, seminars 90 classes - home individual learning		
15.	Forms activiti	of teaching es	15.1.	Theoretic	cal course	34 classes	
			15.2.	Practical Seminars	,	26 classes	
16.	6. Other forms of activities		16.1.	Practice			
			16.2.	Individua	al tasks		
			16.3.	Individua	al (home) learning	90 classes	
17.	Metho	d of assessment		·			
-	17.1	Tests	min – max  Continual assessment - 1 (written)				
			• Structure of eukaryotic cells; 23-38 points				
				structural characteristics during mitosis, meiosis			
			and apoptosis; structural specificities of				
			different cell types				
			Final exam: final test (written) Physiology				
			Transp	h cell membrane,			
	1		physiology of cell organelles,				
					cleus, cell informat		

			specialized cell systems	25 42 naints			
				25 - 43 points			
			The grade in the final exam is given according to the grading table, and on the basis of the sum of points obtained in all of the activities.				
	17.2	Seminar paper/project (oral/written presentation)		min – max			
	17.3	Active participation	Theoretical course Practical course Completed textbook	min – max 1-3 4-7 mandatory			
18.		ng criteria s / grade)	up to 59 points from 60 to 68 points	5 (five) F 6 (six) E			
			from 69 to 76 points	7 (seven) D			
			from 77 to 84 points	8 (eight) C			
			from 85 to 92 points	9 (nine) B			
			from 93 to 100 points	10 (ten) A			

19.	Requirement for signature and taking the final exam			The student is required to actively follow all of the planned activities.						
				Conditional criteria for assessment of knowledge: In order to get a signature, the student should obtain minimum points in both theoretical and practical courses, and to present a seminar paper; In order to take the final exam, the student should obtain the minimum points in the three continual assessments; If the student has not obtained the minimum points in the continual assessments, he/she will be obligated to pass them before the final exam.						
20.	Language of	of inst	ruction	Macedonian						
21.	Method of quality of to	monit	oring the	Attendance of students to classes and interactive participation in theoretical and practical lessons and anonymous student's evaluation of the subject, teachers and collaborators involved in the educational activities						
22.	Textbooks									
		Mai	ndatory							
		1.	Guyton AC,	Hall JE.	Pł	extbook of Medical hysiology 12 th lition.	Elsevier, London,	2011		
	22.1.	2.	Milenkova Kostovska N	L,	ch	ructural aracteristics of akaryotic cells.	Skopje	2011		
		3.	Cooper GM RE.	, Hausman	Ti M	ne Cell: A olecular Approach.	Sinauer Associat es, Boston, USA	2016		
	22.2.	Ado	litional							
			T							
		1	Widmaier E, K.	Raff H, Strang	5	Vander's Human Physiology: Th Mechanisms of Bod Function.				
	Cubicat					IICAI DIOCHEM				

		1	Widmaier E, Raff H, St	rang	Vander's Human McGraw - 201					2013
			K.		Physiolo	ogy:	The	Hill		
					Mechan	isms o	f Body	Education	ı	
					Function	n.	·		-	
1.	Subject			CLIN	NICAL BIOCHEMISTRY					
-	•					DIOC.	TITAIVIE	) 1 K 1		
2.	Code			MED	-424					
3.	<b>Study Pro</b>	Study Program			ral medic	cine				
4.	Organizing Institution ( Unit,			UKIM-Faculty of Medicine						
	<b>Institute, Chair, Department)</b>			Department of Biochemistry and Clinical						
				Bioch	Biochemistry					
5.	Education	al de	egree (first or second	Integrated cycle						
	cycle)				-					
6.	Study year	r /ser	nester	Fourt	h/VIII	7.	Numb	er of	1	.5
							credits	,		
8.	Responsible teacher		acher	Prof.	Jasna Bo	ogdans	ka The	lectures ar	e giv	en by
				professors, members of the Department.				t.		
9.	Preconditi	reconditions: Completed Biochemistry 2 course								

#### 10. **Teaching goals of the study program (competencies):** To understand and to aplly the laboratory findings in the diagnosis of various diseases; To prepare seminar papers (case reports) related to laboratory parameters important for clinical practice and differential diagnosis **Contents of the study program:** 11. **Theoretical course:** → Clinical enzymology; + Plasma proteins and their roles in diagnosis of various disease; + Hyperlipoproteinemia, atherosclerosis, CAD, hypoliporoteinemia; • Liver function tests; jaundice, cirrhosis; · Clinical biochemistry of renal disease; biochemical parameters in diagnosis of kidney disease, ABI, HBI; • Tumor markers in diagnosis and prognosis of malignity disease; · Diabetes mellitus; · Neonatal screening; • Fluid and electrolyte balance; • Biological factors that influence biochemical parameters. **Practical course:** → Preparation and oral presentation of seminar paper; → Visit to a clinical laboratory. 12. Methods of studying: class room oriented lectures, interactive lectures, group work, practical training, seminar paper. 13. Total no. of hours: 45 hours 14. Distribution of the available time Type of educational 15. 15.1 Lectures-theoretical 30 hours activity course 15.2 Practicals (laboratory, 4 hours 11 hours Seminars clinical). seminars, team work Project assignments 16. 16.1 16.2 Individual tasks Other types of activities 16.3 Home studying 15 hours 17. **Assessment of knowledge:** points 17.1 Final exam Subject: Clinical Chemistry min.-max. 37-65 Oral exam points 17.2 Seminar work/project min.-max. (presentation: written Seminar works 1-7.5 points and oral) Active participation 17.3 min.-max. Theoretical course points 21-22.5 Practical course points 1-5 Knowledge assessment up to 59 points 5 (five) F 18. criteria: 60 to 68 points 6 (six) E (points/grade) 69 to 76 points 7 (seven) D

77 to 84 points

8 (eight) C

	i									
				8	85 to 92 points		9	9 (nine) B		
				93	3 to 100 points			10 (ten) A		
19.	Criter	ia for ol	otaining a	Condi	Conditional criteria for assessment of knowledge: In					
	signat	ure and	taking the	order 1	order to receive the professor's signature for the course,					
	final e	xam	C	and to enroll the oral exam the students are requested to						
					ly participate in					
20.	Langu	age of t	the course	Englis	English					
21.	Metho	od for ev	valuation of	Anonymous student's evaluation of the subject, teachers						
	the qu	ality of	education	and collaborators involved in the educational activities						
22.	Litera	ture								
		Manda	atory textboo	ks						
			Autho	r	Title		Publisher	Year		
	22.1	1	Gaw A, et a	ıl.;	Clinical		Churchill	2008		
			ŕ	,	Biochemistry		Livingstone:			
							Elsevier			
	22.2	Additi	onal literatur	e	I		l			
	22.2		Autho	r	Title		Publisher	Year		
	1	1	1				II			

1.	Subject	PHARMACOLOGY						
2.	Code	MED 323						
3.	Study Program	General Medicine						
4.	Institution (Unit, Institute, Chair, Department)	Ss Cyril and Methodius University, Medical Faculty, Department of Anatomy						
5.	Degree of education (first or second cycle)	Integrated studies						
6.	Study year/semester	Third/ (VI) 7. Number of credits 7						
8.	Responsible teacher	Prof. Dimce Zafirov, PhD, MD						
9.	Preconditions	Obtained loans for VI semester						
10.	Teaching goals:  • Introduction to pharmacology as a subject and its aims;  • Introduction to pharmacodynamic characteristics od drugs, how a drug affects an organism,							

modes of action of drugs upon the body.

- Achieving basic knowledge of pharmacokinetic, the branch of pharmacology concerned with the movement of drugs within the body and the importance of knowing the pharmacokinetic properties of drugs.
- Acquiring basic knowledge about toxicology and toxicological research as well as their importance in the development of drugs
- Treatment of addiction and drug abuse
- Understanding the basic principles of pharmacogenetics
- Acquiring knowledge of special pharmacology, in meaning of pharmacodynamic groups and their therapeutic areas.
- Students will learn how to prescribe medicines and will gain understanding of all pharmaceutical dosage forms.

#### 11. Brief content:

#### **Theoretical classes:**

- Introduction to pharmacology.
- Pharmacodynamia.
- Pharmacokinetics
- Drug addiction
- Pharmacogenetics
- Pharmacology of central nervous system, psychopharmacology, vegetative nervous system, respiratory system, cardiovascular system, hematology, digestive system, urinary system, hormones, vitamins, antimicrobial drugs.
- Toxicology (separation of toxins, general principles of poisoning, treatment and specific treatment of poisoning).

#### **Practical classes:**

- Pharmacography
- Pharmaceutical dosage forms
- Demonstrating experimental models: in vitro and in vivo.

12.	Metho	ods of studying:						
	Interac	ctive teaching during	lectures, p	oractical train	ings and seminars.			
13.	Total	available time:		7	210 classes			
14.	Organ	ization of the course			105 classes - theore	tical course, practical		
						individual learning		
15.	activities		15.1.	Theoretica	l course	55 classes		
			15.2.		ourse (laboratory, eminars, group	50 classes		
16.	16. Other forms of activities		16.1.	Practice		classes		
			16.2.	Individual	tasks	classes		
				Individual	(home) learning	105 classes		
17.	Metho	d of assessment		•				
	17.1	Tests				min – max		
			Continu	ual assessme	nt - points	18 - 30		
			Tw	o written test		n 6, max 10 points)		
						(min 12, max 20 points)		
						min - max		
			Oral ex	amination*	point	s 24-41		
			Practica	Practical examination** poin		ts 8-12		
			*Oral examination (integrative) – 3 questions on the basis of					
		Final test		which the integrative knowledge in the field of pharmacology is assessed, which is important for understanding the subject.				

	**Practical examination (catalog skills) – pharmacography and pharmaceutical dosage form.
	The student is obliged to score a minimum of the foreseen points for each part of the exam, in order to take the final exam.  Otherwise, the exam is deemed to have failed.

	17.2	Seminar paper/project (oral/written presentation)				m	iin – max		
	17.2	<u> </u>					•		
	17.3	Active participation	TC1 4: 1 1 3			m	nin – max		
			Theoretical classes*	•			1-3		
			Practical classes **	. 1 1			9 - 14		
			*Attendance on the	oretical classes					
			30%-50% 1 point						
			51%-70% 2 points						
			71%-100% 3 points	S					
			**Practical classes	to					
			Attendance : 3 point		<b>t</b> a				
			Activity:min 6 poin			a. 1 maint			
			Practical exam due	to not attendanc	ce on clas	s: 1 point			
18.		g criteria (points /	•	9 points			5 (five) F		
	grade)		from 60 to 6	•			6 (six) E		
			from 69 to 7	•			7 (seven) D		
			from 77 to 84	4 points			8 (eight) C		
			from 85 to 92	2 points 9 (nine					
			from 93 to 10	) points			10 (ten) A		
19.	Requir	ement for signature	Conditional cri	teria for assess	ment of l	knowledge	•		
	_	ring the final exam	In order to get a			_			
		_	theoretical classes, actively participate in practical classes and						
			seminars and take the subsequent exams.						
			In order to take	the final exam	in the exa	am session,	the student		
			should have passed each of the anticipated continuous exams						
			with a minimum		_	ited contin	dods exams		
			If during the semester the student did not pass the continuous						
			examinations, the student takes a complete exam (in the exam						
			session, first has to pass the one's he did not passed, then he						
			takes the final exam).						
			The grade in the final exam is given according to the grading						
			table, on the basis of the sum of points obtained in all of the						
			activities and the	final exam.					
20.		age of instruction	English						
21.		d of monitoring the	Professors and o						
	quality	of teaching process	included in the theoretical and practical classes will be						
	<u></u>		evaluated by the students (anonymous).						
22.	Textbo	oks							
		Mandatory				T	1		
			Dale: H.P.Rang,	Pharmacology	,	Akademski	2013		
		M.M.Dale	, J.M. Ritter, R.			pecat			
	22.	1. Flower							
			nt of pharmacology						
		and toxico	_	Authorized led	ctures				
	I.Golan,		David E	Principles	in	In press			
				pharmacolog	•				
		Departme		Text book fo		In press			
		_	ology and	practical exe	rcise				
	toxic		y						
	22.	.2. Additional							

1.	Goodman & Gilman's	The Pharmacological	Tabernak ıl	2011
	Laurence L.Brunton, John	Basis of Therapeutics		
	S.Lazo, Keith L.Parker			
2.	Varagic V, Milosevic P	Pharmacology	Elit Medi ca	2012
			23	
			izdanie	
3.				
4.				

1.	Subject	CLINICAL PHARMACOLOGY				
2.	Code	MED-425				
3.	Study Program	General Medicine				
4.	Institution	Ss Cyril and Methodius University, Medical				
	(Unit, Institute, Chair, Department)	Faculty, Department of Pharmacology				
5.	Degree of education	Integrated cycle				
	(first or second cycle)					
6.	Study year/semester	Fourth /VIII 7. Number of 1.5				
		credits				
8.	Responsible teacher	Assoc.Prof. Dimce Zafirov, PhD, MD				
9.	Preconditions	Fulfiled condition to inroll in the VII semestar				

#### 10. Teaching goals:

- Introduction to the subject and tasks of the clinical pharmacology and its practical meaning in the todays therapy;
- Understanding the basics of clinical pharmacology and training the students to use its principles in practise, in particular to specific patients groups;
- Introduction to basic knowlege in managing clinical studies;
- Trainig the students to identify, follow and report adverse effects of drugs;
- Optimisation, therapy individualisation and dosing regiments of specific drugs; Knowlege of clinical importance of drug interactions.

#### 11. Brief content:

# **Theoretical course:**

- Introduction to clinical pharmacology;
- Design and conduct of clinical drug studies; bioequivalence studies and good clinical practice standards during study performance;
- Drug interactions and its clinical significance;
- Use of drugs in elderly patients, children, during pregnancy and lactation and in patients with renal and hepatic impairment;
- Adverse drug reactions and Pharmacovigilance.

#### **Practical lessons:**

- Preparation of key documents for conduct of clinical trials (study protocol, case report file, informed consent);
- Individual dosing models for drugs, determination of dosing regiments acording to drug blood concentrations and acording to therapeutic effect of specific drug groups;
- Practical aspects of adverse effects reporting using electronic reporting system.

# 12. **Methods of studying:**

Interactive teaching during lectures, practical trainings/seminars

13. Total available time: 45 classes

14.	Organi	zation of the course	course, seminars				
15.	Forms activiti	of teaching	15.1.	Theoretical course	e individual learning 20 classes		
			15.2.	Practical course, Seminars	10 classes		
16.	Other	forms of activities	16.1.	Practice	classes		
			16.2.	Individual tasks	classes		
			16.3.	Individual (home) learning	15 classes		
17.	Metho	d of assessment					
	17.1	Tests			min – max		
	2,12		Continu	nal assessment* - points 18-			
			Continual knowledge assessment: Written test (min.12-max 20 points) 1 study case of individual dosage regiment (tim work) (min. 6-max. 10 points)  • Oral examination (intergrative knowledge) – 3 questions in order to determine the integrative knowledge of the material learnt in Clinical Pharmacology relevant for understanding the course purpose.				
	17.2	Seminar	skills catalogue): Text materials prepared for the practical course  The student has to fulfill the minimum recuired points for every part of the examination in order to be able to get the scores for the final examination. In conterary the exam can not be passed.				
		paper/project (oral/written presentation)			min – max		
	17.3	Active participation	Theoretical course $1-4$ Practical course $9-14$ Theoretical course attendance $51\%-60\%$ 1 point $61\%-70\%-2$ points $71\%-85\%-3$ points $86\%-100\%-4$ points				
			4 points Interact	l course attendance live knowledge check: min 6 l course colloquium: 2 point	points-max. 10 points		
18.	18. Grading criteria (points / grade)			up to 59 points om 60 to 68 points om 69 to 76 points om 77 to 84 points om 85 to 92 points on 93 to 100 points	5 (five) F 6 (six) E 7 (seven) D 8 (eight) C 9 (nine) B 10 (ten) A		
	<u> </u>		fror	n 93 to 100 points	10 (ten)		

19.	Requirement and taking t			The stud		equired to	activel	y follow	w all of the	planı	ned
		In order points in a semina In order minimum If the st continua before th The grad	to get a both the repaper to take no points udent he lasses te final ele in the don the	the final in the thas not cossments, lexam.	e, the st and pra- l exam, ree com- btained he/she v	the stutinual as the mwill be over	knowledge hould obtain courses, and ident shoult assessments; inimum potabligated to ording to the	n mind to perfect the design of the design o	tain the in the sthem		
20.	Language o	f instruc	tion	English							
21.	Method of monitoring the quality of teaching process ass				-	nous eval articipate			course, teac	hers	and
22.	Textbooks										
	22.1.	1. D pl to 2. R H J. 3. Ja	Department of pharmacology and toxicology  Rang and Dale: H.P.Rang, M.M.Dale, J.M. Ritter, R. Flower  James M Ritter, Lionel D Lewis, Timothy GK Mant, Albert Ferro			Authori Pharma A Texth Clinical Pharma Therape	cology		Akadem ski pecat Hodder Arnold, an imprint of Hodden	201	
		Addition 1. A	onal rthur J. Atk	inson		Principl	les of C		Elsevier		2007
	22.2.					Pharma Second					
1.	Subject					SICAL ABILIT		MEDI N	CINE		AND
2.	Code				MED	515					
3.	Study prog	gram			Study	for Doc	ctors of	Medic	ine		
4.	Institution (Unit, Institute, Chair, Department)			rtment)	"Ss C Facul Instit Reha Cathe		Methoedicine, hysical hysical	dius" U Medic	Jniversity,		
5.	Degree of education (first or second cycle)					rated 6-y			ı		
6.	Study year				Fifth/		7.		credits	1	
8.	Responsib	le teach	er			Erieta PRM sp		-	nitrova, N	ΙD,	MSc,

9.	Preconditions		Requirement for the ninth semester fulfilled		
10.	Teaching goals:		· ^		
	<ul> <li>To acquire knowledge for fundamentals of physical therapy</li> <li>To acquire knowledge for physiological and therapeutic effects of some physical modalities</li> <li>To understand positive effects of kinesitherapy (exercise therapy) and occupational therapy</li> <li>To acquire knowledge for orthopaedic devices and their use in rehabilitation</li> <li>To acquire rehabilitation procedures for rehabilitation of patients with rheumatologic, neurologic, orthopaedic disorders, child diseases, posttraumatic conditions, rehabilitation of cardiovascular and pulmonary diseases</li> <li>To know indications and contraindications for physical therapy and rehabilitation</li> <li>To acquire knowledge for multidisciplinary approach in rehabilitation</li> <li>To become qualified for education of patients about their need for physical therapy and rehabilitation treatment</li> </ul>				
11.	Brief content Theoretical course:  Introduction to physical medicine and rehabilitation Patient's examination Heat therapy Light therapy Hydrotherapy Balneotherapy Fundamentals of electrotherapy Manual therapy- massage, and spinal traction Fundamentals of exercise therapy Occupational therapy Orthopaedic devices Rehabilitation of patients with rheumatologic diseases Rehabilitation of patients with orthopaedic diseases and posttraumatic conditions Rehabilitation of diseases in childhood				
	- Practical lessons:				
	Introduction to different the	_	ttic rehabilitation programs		
	0 11		methods of physical therapy in a variety of injuries		
12.	and illnesses (infra –red ra <b>Methods of studying:</b>	ays, uiti	raviolet rays, ice therapy)		
12.	Interactive teaching dur		ctures and practical trainings, classes of practical		
	instruction, independent s	tudy by			
13.	Total available time:		30 classes		
14.	Organization of the course	e	15 classes - theoretical course, practical course		
			15 classes - home individual learning		
15.	Forms of teaching	15.1	Lectures-theoretical 7 classes		
	activities	15.2	Practical instructions & classes		
	15.2 Practical instructions, 8 classes clinical lessons, team				

work

16.	Other	forms o	of activities	16.1	Practice			
			-	16.2	Individual tasks			
			_	16.3	Individual h	nome	15 classes	
					learning			
17.	Metho	d of ass	sessment					
	17.1	Tests					min – ma	ax
				Contin	ual assessment - 1	(writt	ten) 54-90 points	
		T' 1		T' 1	C* 1.			
		Final e	exam		exam: final test	4 00 :	noints	
				1'11.	al test is written 54	4-90	ponits	
				Th	e grade in the final	exam	is given according	to the
					_		asis of the sum of po	
				obt	ained in all of the a	activit	ies.	
	17.2	Semin	ar					
			project					
		`	vritten					
	17.0	-	tation)				•	
	17.3	Active		Theory	etical course		min – max	
		partici	pation		eal course		1-3 points 5- 7 points	
18.	Gradii	ng criter	ria (points	Tractic	up to 59 points		•	(five) F
10.	/ grade	_	in (points	from	60 to 68 points			6 (six) E
	8-00	-,			from 69 to 76 points		7 (seven) D	
			_		77 to 84 points			eight) C
					85 to 92 points			(nine) B
			-		from 93 to 100		10	(ten) A
					points			
19.			for signature					
	and ta	king the	e final exam	activities.				
				Conditional criteria for assessment of knowledge: In				
				order to get a signature, the student should obtain				
				minimum points in both theoretical and practical courses. The grade in the final exam is given according				
					_		he basis of the sum of	_
					s obtained in all of			
				_				
20.			nstruction	Engli				
21.			onitoring		•		tion of the subject ar	nd
	_	•	teaching	teach	ing stuff who are in	nvolve	ed in the education.	
22.	proces							
22.	Литература  Задолжителна литератур			<u> </u>				
		Р.бр			Наслов		Издавач	Година
		1 Erieta Nikoli		_	Textbook: Fizik	kalna	* *	2011
	22.1				medicina i		zastijet znopje	
			Laserjet, Sl	kopje,	rehabilitacija			
			2011	. =	(Physical med	icine		
					and rehabilitation	n),		
	22.2		нителна лит			1	**	
		Р.бр	Авто	p	Наслов		Издавач	Година

1	ı						
		1	Eds.J. De Lisa	In Physical			2011
				Medicine and			
				Rehabilitation.			
				Principles and			
				Practice			
				Some Chapters:			
		T					
				-Therapeutic			
				physical modaliti	es -		
				Massage			
				-Rehabilitation of	f		
				patients with			
				amputation of			
				lower extremity -			
				Scoliosis and other	er		
				deformities of the	e		
				spine - Orthosis			
				-Rehabilitation in	1		
				the water etc.			
		2	Eds. Randall	In Phys	ical		2011
			Braddom	Medicine and			
				Rehabilitation.			
				Some Chapters: -			
				Modalities of			
				physical agencies	3 -		
				Therapeutic			
				exercises			
	~				2 2 2 2		
1.	Subjec	et			)GY A	AND OBSTETRI	.CS
2.	Code	<u> </u>		MED-422			
3.	•	Prograi	n	General Medi		1.	
4.	Institu		a Chair Danauturant	UKIM-Medic		•	atrica .
5.	-		e, Chair, Department			ecology and Obste	cuics
٥.	Degree of education (first or second cycle)		Integrated 6-y	year stl	uuy		
6.	Study year/semester		Fourth/VIII	7.	Number of	12	
0.	Study	year/se	mester	Fift/IX	/.	ECTS credits	14
				1'111/1/		LC 15 CICUIS	
8.	Resno	nsible t	eacher	Head of depar	rtment		
	Responsible teacher			Prof. Goran I			
						ned by all membe	ers of the
				department	PC11011	nea by an membe	15 OI the
0	Drage	nditions		-	allman	t in VII competer	
9.	Preconditions			rilled for enre	Filled for enrollment in VII semester		

# 10. **Objectives of the course program (competences):**

- The student learns and mastered the skills within the framework of rationaldiagnostics and the modern treatment of gynecological diseases.
- To familiarize the student with the basic principles of diagnosing operational preparation and treatment within Gynecology and Obstetrics.
- The student can rationally be able to evaluate and refer to the treatment of acutegynecological and obstetric diseases, which if not diagnosed and treated in a timely manner can end up fatal.
- Student be able to evaluate and treat gynecological and obstetric diseases, monitorand assess normal pregnancy

#### 11. **Course content:**

#### **Theoretical instruction:**

# **A.** Gynecology Contents:

- Introduction to gynecology and ethical principles
- Examination and objective finding in gynecology
- Gynecological neuroendocrinology
- Pelvic anatomy
- Embryology with histology
- Basics in surgical endocrinology
- Growth, development and sexual maturation
- Disorders of puberty and adolescence
- Menstrual cycle and its disorders
- Sexually transmitted diseases
- Inflammation of the genital organs
- Emergency and critical conditions in gynecology
- Reproductive endocrinology and male infertility
- Tubal factor infertility and endometriosis
- Assisted reproduction
- Pelvic prolapse
- Urinary incontinence
- Genital fistulae
- Diagnostic methods in gynecology
- Perimenopausal HRT
- Contraception and paling of the family
- Benign tumors of the vulva, vagina and cervix
- Benign tumors on the body of the uterus
- Benign tumors of adnexa
- Malignant tumors on the vulva, vagina and cervix
- Malignant tumors on the body of the uterus
- Malignant tumors of adnexa

Early diagnosis and prevention of cervical cancer and colposcopy Benign and malignant tumors of the breast

# **B.** Content by Obstetrics:

- Conception. Morphological development of the placenta.
- Fetus and placental membranes.
- The construction and function of the placenta.
- Placental hormones.
- Placenta previa
- Abrubtio placente
- The use of drugs in pregnancy Urgent conditions in pregnancy
- Graviditas E.U.
- Bleeding in the first and second half of pregnancy
- Breech delivery
- Abnormalities on the placenta.
- Embryopathy and fetopathy.
- Prenatal diagnostics.
- Genetic counseling.
- Normal and abnormal pelvis
- Multiple pregnancy
- Infections in pregnancy
- PPO,ALSy
- IUGR
- Rh incompatibility and Rh sensibilization
- Diagnostic and therapeutic interventions in pregnancy
- Gestosis
- Fetus as an object
- Normal labor. Normal deliveries.
- Fetal distress

- Preterm delivery.
- Prolonged pregnancy Diabetes in pregnancy
- Dystocia.
- Induction of labor
- Mall rotations and mall presentations
- Completion of delivery with a vaginal intervention
- Completion of delivery with S.C.
- Anesthesia and analgesia in obstetrics
- Ultra sound in pregnancy
- Diseases of the trophoblast
- Puerperium
- Pre-term and postpartum bleeding
- Internist and surgical diseases in pregnancy
- Ethical and legal aspects in perinatology

#### **Practical classes:**

# A. Gynecology

- gynecological history
- gynecological examination
- cytological investigations
- taking swabs
- Rtg diagnostics in gynecology
- laparoscopic diagnostics in gynecology
- biochemical investigations in gynecology
- RCUI and CEF
- Ultrasound diagnostics
- Acute conditions of gynecological origin: acute pain and acute bleeding
- Painful syndrome in gynecology
- Forensic research in gynecology
- Benign diseases in gynecology: vulva, uterine cervix, uterine body, adnexa
- Malignant diseases in gynecology: vulva, uterine cervix, uterine body, adnexa
- Treatment of an urogenital patient
- Operative cuts, suture, suture material and instruments in gynecological surgery

#### **B OBSTETRICS:**

- obstetric history
- obstetric examination
- clinical treatment of the pregnant woman
- laboratory and radiographic diagnostics in gravidity

- keeping a normal birth

- leading to birth in the pelvic presentation of the fetus
   Abortion techniques in obstetric practice RCUI
   childbearing of maternity pathways, epizoototomy and suture
   obstetric surgery: external bone, Perforatio capitis, forceps surgery to complete the birth in the pelvic fetus

12.	Learn	ning methods: Inter	active 1	ectures, e	xercise	s / semir	nars	
13.	Total	available time:			360 c	lasses		
14.	Organ	ization of the cours	e		/			
15.	Forms activit	s of teaching ies	15.1	Theoret	Theoretical course Gynecology – 64 class Obstetrics – 86 classe Practical course, Gynecology - 56 class		86 classes	
			13.2	seminar		,	Obstetrics –	
16.	Other	forms of activities	16.1	Practice			classes	
			16.2	Individu	al tasks	S	classes	
			16.3	Individu learning		(home)	102 classes	
17.	Metho	od of assessment бо	дови					
	17.1	17.1 Oral examination		4 writte 1 and 2 d gynecole	ual ass n colloqu ogy	essment ium - qı	•	
		Final exam		Oral exa			points points	міп-мах. 27 - 45 6 – 10
	17.2	Seminar paper/pro (oral/written presentation)	oject	/			F	
	17.3 Active participation		Theoreti Practica			points points	міп-мах. 1 - 3 11 – 14	
18.	Gradi	rading criteria (points up to		59 points		5 (five	) F	
10.			60 to 68 pc	oints	6 (six	•		
			59 to 76 pe		7 (sev	·		
				77 to 84 pe		8 (eigh		
				35 to 92 pc		9 (nine		
				93 to 100 j		10 (ter	·	
L	HOIII			L	· · ·	,		

19.	Requirement for signature	Conditional criteria for assessment of knowledge:
	and taking the final exam	Conditional criteria:
		In order to obtain a signature, a student is required to attend the theoretical and practical classes and to score
		minimum points.
		In order to enter the final exam, the student should pass
		the anticipated continual assessments or to earn a
		minimum of 30% of the total number of points envisaged
		for continual assessments, and in the exam session he
		first takes the undue continual assessments, and then
		approaches the final exam.
		The grade for the course is formed according to the rating
		table, based on the sum of the points from all the

				activit	ies, th	ne continual ass	sessments and the fina	al exam
20.			instruction	Macedonian				
21.			onitoring			-	ion of the subject and	
	the quality of teaching		teache	ers and	l collaborators p	articipating in the tea	ching	
	process							
22.	Textbooks							
		Mand						
			Author			Title	Publisher	Year
		1	Stephen G.	Gab,		etrics:	Tabernacul,	2011
			Jennifer R.			nal and	Skopje	
			Nibil, Joe Lo	ee	-	lematic	(translation with	
			Simpson		preg	nancies	a project of the	
							Government of	
							the Republic of	
			T 41 C			1	Macedonia)	2011
	22.1	2	Jonathan S.			ecology	Tabernacul,	2011
			Berek		Bere	k And Novac	Skopje	
							(translation with	
							a project of the Government of	
							the Republic of	
							Macedonia)	
		3	Willibald		Prac	tical	Medical	1977
			Pschyrembe	1		ecology	Naclada Belgrade	
			1 sengrennee	•	- Cyli	2001057	-	
							Zagreb	
		Addit	ional		I		<u>.                                     </u>	l
			Author	•		Title	Publisher	Year
		1	Barbara Hof	fman,	Artic		McGraw Hill	2012
			John Schorg		Will	iams	Profesional	
			Lisa Halvors		Gyn	ecology		
			Karen Brads		Seco	ond Edition		
	22.2		F.Cunningha	,				
		2	F.Cunningha	am,		cle II.	McGraw Hill	2009
			Kenneth Lev			iams Obstetric	Professionsl	
			Steven Bloo		23 <sup>rd</sup>	Edition		
			John Hauth,					
			Dwight Rou					
			Catherine Sp	ong				
1.	Subjec	t				GYNECOLOG		TETRICS
						CLINICAL PR	ACTICE	

MED 623

2.

Code

3.	Study Program	General Medicine			
4.	Institution	Ss Cyril and Methodius University, Medical			
	(Unit, Institute, Chair, Department)	Faculty, Department of Gynecology and			
		Obstetrics			
5.	Degree of education	Integrated 6-year study			
	(first or second cycle)				
6.	Study year/semester	Sixth / XI - XII 7.Number of 9			
		ECTS credits			
8.	Responsible teacher	Head of department			

		Doc. d-r Goran Dimitrov				
		*teaching is performed by all members of the				
		department				
9.	Preconditions	Credits achieved (passed exam) from Gynecology				
		and obstetrics				
10.	Objectives of the course program (compe	etences):				
	Introduction to the diagnostic and therapeutic procedures in the area of urgent					
	gynecology and obstetrics.					

#### 11. Course content:

#### **Perinatalogy**

- Filling in obstetric history and birth protocol
- Obstetric examination: a condition of the cervix, dilatation, fetal heals, presentation, advancement of birth.
- Obstetric examination: pelvimetry, amnioscopy.
- Monitoring of the mother: cardiotocography, ph-metric intra partum, ph blood metric from a new-born
- Participation in spontaneous labor: head and pelvic treatment, repair of soft-tissue cleavage and episiotomy
- Assistation in delivery with caesarean section and vaginal delivery obstetric operations: vacuum, forceps, baby extraction
- Neonatal treatment
- An ultrasound examination of a pregnant woman in the first half of pregnancy
- An ultrasound examination of a pregnant woman in the second half of pregnancy
- Participation in everyday work in the clinic for risky pregnancy
- Participation in the work of the Intensive Peripartum Care Unit **Gynecology:**
- Gynecological examination, taking a swab for microbiology and Papanicolau, colposcopy examination
- Participation in the daily work of the gynecological departments, taking a history, filling in gynecological history
- Assistance in small gynecological interventions: curettage, biopsy,
- spiral insertion, cyst posture, cystoscopy
- Ultrasound gynecological examination
- Assistance to major gynecological surgeries: abdominal and vaginal hysterectomy
  - Assistance in minor and minimally invasive gynecological operations: hysteroscopy, laparoscopy, TVT and TOT prosthesis, IVS prosthesis
- Working in a gynecological clinic: urogynecological, oncological, ultrasound, colposcopic, ambulance for human reproduction, cytogenetic laboratory, in-vitro fertilization
- Family Planning and Contraception, Artificial abortion Assistance in first and second trimester

The practice is carried out within 4 working weeks with a full time of 8 hours, organized in 4 rounds during the XI and XII semesters:

- stay in the maternity room
- stay in one operational unit
- stay in the clinic for risky pregnancies
- stay in the colposcopy clinic and the gynecological ultrasound clinic

It takes place in groups of 2-5 students on a mentoring principle with professors and assistants. During the tour, the departments and mentors change.

Everyday activities of the student will be recorded in a special "diary of activities" that will be verified with the mentor's signature.

#### 12. **Learning methods:**

- Participation in the expert meetings of the clinic
- Participation in morning visits
- Participation in the daily work of the departments at the Clinic for Gynecology and Obstetrics

• Participation in surgical interventions in the field of gynecology and Obstetrics Knowledge and Understanding:

The student will acquire theoretical knowledge in the field of perinatology and gynecology referring to admission of a patient in hospital conditions, will learn about the characteristics of taking a history of each department, as well as the peculiarities of clinical examination of different departments. The student will get to know the setup procedures for working diagnosis and treatment plan and surgical treatment of individual clinical cases. Key skills:

The student will be able to apply the acquired knowledge of interventional ultrasound, and to develop surgical culture and introduction to surgical principles. After practice, he will know how to do a gynecological examination and take a swab, fill out obstetrics history and birth protocol, to make an ultrasound examination of a pregnant woman, to assist during delivery, small and large surgical interventions.

	small and large surgical interventions.									
13.	Total available time:			210 classes						
14.	Organization of the course			160 classes practice						
				50 classes - home individual	learning					
15.	Forms of teaching activities	15.	.1.	Practical course	160 classes					
16.	Other forms of activityes	16.	.1.	Individual (home) learning	50 classes					
17.	Method of assessment									
	The student is obliged to a working days, 8 hours daily		d and	actively participate in the pra	actice during 4 weeks (20					
		1	min							
	Practice * points		60 -	100						
	* attendance: 2.5 points, ac	tivity	y (skil	ls): 2.5 points						
18.	Grading criteria			ent should earn a minimum of	-					
	(points / grade)	Th	e stud	ident's assessment is descriptive (passed).						
19.	Requirement for signature		Cond	litional criteria:						
	and taking the final exam		To ge	et a signature and win a minimum score for						
			passi	ng the student is required to atte	end the practice					
			and to	nd to overcome all the activities and skills provided						
			by su	bject program						
20.	Language of instruction		Mace	cedonian						
21.	Method of monitoring the		Stude	ent anonymous evaluation of th	ne course and teachers and					
	quality of teaching process		assoc	iates participating in teaching.						
22.	Textbooks									

#### 22. Textbooks

	Mano	latory					
		Author	Title		Publisher	Year	
22.1.	1.	Stephen G. Gab, Jennifer R. Nibil, Joe Lee Simpson	Obstetrics: Normal and problematic pregnancies		Tabernacul, Skopje (translation with a project of the Government of the Republic of Macedonia)	2011	
	2	Jonathan S. Berek	Gynecology and Novak	Berek	Tabernacul, Skopje (translation with a project of the Government of the Republic of Macedonia)	2011	

1.	Subject	RADIOLOGY					
2.	Code	MED-316					
3.	Study Program	General Medicine					
4.	Institution	Ss. Cyril and Methodius University, Medical					
	(Unit, Institute, Chair, Department)	Faculty, Department of Radiology					
5.	Degree of education	Integrated 6-year studies					

	(first or second evals)								
	(first or second cycle)		111.	year/	7.	Number of	2		
6.	Study year/semester			emester	7.	ECTS credits	3		
0	D '11 / 1				1 , 3		1		
8.	Responsible teacher					Vasilevska-Nikodin			
	Assist. Prof. Dr. Elizabeta Stojovska-Jov Assist. Prof. Dr. Maja Jakimovska- Dimi								
						· ·	ımıtrovska		
						ljana Prgova	_		
9.	Preconditions		Pas	ssed first	t part o	of the professional	l exam		
10.	Teaching goals:								
	Learning fundamental concepts in radiology by systems in the human body Practical work by showing examples of radiological methods, normal anatomy and pathology								
		examples of	of radiolog	icai metr	noas, no	ormai anatomy and	pathology		
	by systems								
1.1	D-1-64464141								
11.	Brief content of the study	program:							
	Theoretical course:	vominotio	n. Introdu	otion V					
	How to perform radiology e ray physics. X-ray apparatus			Mon A-					
	Medical preconditions for x			ecroon or	d film	(natural body conti	racte)		
	Radiology methods for exar								
	diaphragm).			Sams (1)		picur	- 4114		
	X-ray of normal chest.								
	Atelectasis, stasis and edem	a on x-ray	image.						
	Non-specific inflammatory			organs. L	Lung				
	tuberculosis and sarcoidosis								
	Professional, parasitic and f	ungal dise	ases of the	lungs.					
	Methods of examination of	the heart a	and large b	lood vess	sels.				
	Normal x-ray image.								
	Congenital and inherited dis				arge bl	ood vessels.			
	Esophagus: radiology metho								
	Stomach and duodenum: me	ethods of e	examinatio	n.					
	Intestine and colon.	. 1	1 6	. ,.					
	Hepatobiliary tract and pane								
	Urgent radiodiagnostics of t			iai organ	S.				
	Urinary tract: methods of ex	ammanon	l.						
	Urinary tract: calculi. Radiologic diagnostics of th	a branct: r	nothods of	ovemine	tion				
	Gynecologic radiodiagnostic				mon.				
	Basic concepts of radiologic				staff du	ring radiodiagnost	ic		
	procedures.	ar protect	ion or pun	ones ana .	our uu	ing radiodiagnost	10		
	Radiologic features when ex	kamining a	a child.						
	Radiologic diagnostics of th								
	Trauma changes in bones ar								
	Inflammation changes in bo	nes and jo	ints: tuber	culosis o	steomy	elitis.			
	Tumors of the skeleton: ben	ign and se	mi-malign	ant.					
	Endocrine hypo- and hy	perfunction	on and a	avitamino	ous di	seases of the s	keleton.		
	Vasography, fistulography:	indication	s and path	ology.					
	Angiodiagnosis.								
	Interventional radiology.								
	Vascular radiology.								
	Non-vascular radiology.								
	Imaging diagnostics: US,	CT, MR	and virtua	al diagno	ostic m	ethods.			
12.	Methods of studying: Interactive teaching during lectures, practical courses and colloqua.								
13.	Total available time			90					
14.	Organization of the course			60 clas	ses - tl	heoretical and pra	actical		
				60 classes - theoretical and practical courses					
							30 classes – home individual learning		
15.	Forms of teaching	15.1.	Lectures			30 classes			
15.	activities	10.1.	course	1110010		50 010505			
	uoti vitios		234150						

15.2.	Practical course,	30 classes
	Seminars	

1.	Subject	FAMILY MEDICINE
2.	Code	MED524

16.	6. Other forms of activities 16			6.1. Practice							
			16.2.								
			16.3.				30 classes				
				learning							
17.	Metho	ds of assessment						Points			
	17.1	Continual assessme	ent			t colloqu		12 min 20 max.			
					Seco	ond coll	oquium	12 min 20 max.			
	17.0	F' 1		D	. 1	1 1	• ,•	22 : 54			
	17.2	Final exam		Pi	ractical and	ı orai ex	aminatio	on 32 min 54 max.			
	17.3	Seminar paper/proj	iect					minmax.			
		(presentation: oral)									
	17.4	Active participation	n		Theoretic	cal cours	se 1 m	in 3 max.			
					Practical			nin 3 max.			
								l practical course			
					% - 50% % - 80%						
					% - 100%	•					
18.	Criteri	a for assessment of			о 59 бода	- F		5 (five) F			
	knowle	edge (point/grade)	fr	om 60 to	о 68 бода			6 (six) E			
					о 76 бода		7 (seven) D				
					о 84 бода		8 (eight) C				
					92 бода		9 (nine) B 10 (ten) A				
19.	Poquir	rement for signature	·		100 бода			10 (ten) A			
19.	_	king the final exam			<b>criteria:</b>	onature	the st	udent should attend			
		8 **** ******			r to get a signature, the student should attend m 30% of theoretical and practical courses and to						
					minimum points.						
			In or	rder to t	to take the final exam, the student should pass						
					ticipated continual assessments or to obtain						
								points in the			
				continual assessments; in the examination session the							
				student has to pass previously failed parts of continual assessments and then he/she can approach to take the							
				ssments exam.	and then	he/she	can appr	roach to take the			
					or the cubi	iect is a	iven acc	ording to the			
				-		_		sum of points			
				-				al assessment of			
					and final e						
20.	Langu	age of instruction	Engl								
21.		d of monitoring the			onymous	evaluat	ion of tl	ne subject and			
	quality	of teaching process			f included						
22.	Textbo										
		Mandatory									
				_	A short tex	ktbook (	of clinica	al imaging, London			
	22.	2 1	r Verlag,			. D . 41. 1		D. Carradana			
	22.1	Gary 30		ias of E	mergency	Kadiol	ogy, WI	B Saunders			
		3. Compan		arvantio	nal Dadia	dogy fo	r Madia	al Students,			
		Springer			niai Naulo	nogy 10	1 IVICUIC	ai Studellis,			
		Additional	., 2017								
	22.2	)	Ha et al.	Breast 1	MR Teach	ing Atl	as, Sprii	nger, 2017			
L	1						, <u>r</u>	<u> </u>			

3.	Study Program	General medicine					
4.	Institution (Unit, Institute, Chair, Department)	UKIM Skopje-Medical Faculty Department of family medicine					
5.	Degree of education (first or second cycle)	Integrated studies					
6.	Study year/semester	7. No of EKTS 1 credits					
8.	Responsible teacher Prof. Dr Goran Petrovski Ass.Prof. Katarina Stavrikj						
9.	Preconditions	Исполнет улов за упис во IX семестар					

# 10. **Objectives (competences):**

- To achieve knowledge, skills and attitude for effective patient orientated care and treatment: prevention, recognize and treatment of most common acute and chronic diseases and mental health.
- To achieve communication and consultation skills in family doctor practice.
- To achieve skills for effective response to different complains and problems of patients, to support them to manage and to make prioritization of problems
- To understand the possibilities and limitations in the community for medical care
- To achieve knowledge and skills to use bio-psycho-social model for patient treatment and care
- To be aware for ethical and moral responsibility of family doctor about creating health policy in the community

#### 11. **Content:**

# **Theoretical part:**

Interactive participation of students with analyses and discussion of cases and theoretical lecture of the responsible teacher.

- 1. Introduction to FM/GP as a specific medical discipline. Principles of Family Medicine: Continuity, comprehensiveness, coordination of care.
- 2. Communication skills.
- 3. Use of evidence based medicine and guidelines for most common presenting symptoms in family medicine.
- 4. Management of diseases at early, undifferentiated stage. Dealing with uncertainty.
- 5. Holistic approach. Bio-psycho-social model.
- 6. Management of multiple health problems, identifying priorities.
- 7. Prevention and health promotion, patient education.
- 8. Decision making based on prevalence and incidence of target.
- 9. Consulting skills stages of a consultation.
- 10. Patient-centeredness complex patient.
- 11. Chronic care, management of chronic diseases and health problems
- 12. Interface of primary and secondary care: Referrals, gate keeping, advocacy
- 13. The family as a source of disease and resource of care.
- 14. Community orientation.

#### **Practical part:**

The practical work will be organized in the Center for family medicine through workshops - patient with chest pain, rational prescribing of antibiotics for acute respiratory tract infection, patient with hypertension, patient with diabetes mellitus, patient with cough and patient with metabolic syndrome.

During the workshops the student can:

- Collects all important clinical information
- Is able to integrate collected information
- Gives a correct working diagnosis
- Orders appropriate diagnostic tests
- Can choose an appropriate treatment method

The student can demonstrate following clinical skills:

- Blood pressure measurement
- Calculate and interpret BMI
- Use of glucometar
- Use of pick flow meter
- Clinical examination of breast
- Taking and interpreting rapid strep test

#### **Seminar work:**

Each student has the task under the supervision of a teacher to prepare a seminar essay on the topic of family medicine with a maximum of 3 pages. Seminar work is submitted in electronic form in the Family Medicine Center by the end of completion of family medicine. Assessed: understanding the problem, explains the findings and give possible solutions of the problem, and use of appropriate literature.

12.	Methods of learning:	
13.	Total	30
14.	Time table	

15.		of educational	15.1	Teaching 15 classes				
	activit	ies	15.2	Practical work (workshops, clinical skills),				
16.	Other	forms of tional activities.	16.1	Project work – 8 classes seminar essay				
1.7			16.2	Home learning				
17.	Asses	1		points				
	17.1	Final exam		minmax.				
				Written part 30 points 18-30				
				Oral part 30 points 20-30				
				Written part is consisting of 15 questions (15 questions x 2 points).  Oral part is consisting of 3 questions (one question max 10 points).				
	17.2	Seminar essay ( was document)	ritten	Seminar essay 5 points 5-12				
				Seminar essay is maximum 12 points (3 points for each of criteria: understanding the topic, explain and gives the solutions, adequate use of literature).				
	17.3	Active involvemen	nt	minmax.				
				Theoretical part 10 points 5-10				
				Practical part 20 points 12-18				
				Theoretical part is maximum 10 points (15 classes x 0,7 points).  Practical part is maximum 20 points (6 workshops x 3 points)				

1.0	C::t-::- f-::-:1	4- 50	5 (f:) F				
18.	Criteria for marks	to 59 points	5 (five) F				
	(points/mark)	From 60 to 68 points	6 (six) E				
		from 69 to 76 points	7 (seven) D				
		From 77 to 84 points	8 (eight) C				
		From 85 to 92 points	9 (nine) B				
		From 93 to points	10 (ten) A				
19.	Prerequisites for taking	Criteria:					
	the final exam	To obtain the signature, student is required to attend the theoretical, practical training and admit seminar and to gain a minimum scorefor all parts.  After that the student has to pass the colloquium and oral exam.					
		The final mark is formed according to the table of marks,					
		based on the sum of p	points from all activities, continuous				
		checks and final exan	1.				
20.	Language	Macedonian					
21.	Methods of following the	Anonymous student e	evaluation for subjects, teachers who				
	quality of teaching	are involved in teachi	ng				
		Internal anonymous e practical work	valuation of teaching theoretical and				
22.	Literature						

		Obliga	atory						
		No	Author		-	Γitle	Publisher		Year
	22.1	1	Ass.Prof Katarina Stavrikj, Prof.Dr Goran Petrovski, Prof.dr Suzana Nikolovska, Prof.dr Gordana Kiteva Trenceva, Ass.Prof. Biljana Gerasimovska Dr sci Zoran Stojanovski	Fam (on	•	medicine available)	Department family medici	of ne	2013
		Optional literature			m'.1		D 1111		***
	22.2	No	Author		Title		Publisher		Year
		1	Robert Rachel	Text		ok of family e	Tabernakil		2010
1.	Subjec	t			PHYSICAL EDUCTION, HEALTH AND SPORT				
2.	Code				MEDI3				
3.	Study 1	Program	Į.		gen	eral medicine			
4.	Institut	ion			Ss	Cyril and Met	thodius Universit	y, Me	edical
	(Unit,	Institute	, Chair, Department)			culty Skopje			
5.	Degree	of r second			Int	egrated cycle			
6.		year/sen			5 .	rears/10	7.Number of	1	
0.	Study	y Cai / SCII	iestei		-	nesters	credits	1	
8.	Respon	Responsible teacher			Prof. Slavica Novachevska, PhD				
9.	Precon		·		None				

# 10. Teaching goals:

The aim of the physical education, sport and health subject is to adopt new and confirm previous motoric skills and knowledge, and functional capabilities in order to improve general health, satisfy the necessity to be physically active, enabling students to rationally and purposefully use their free time as well as improvement of the quality of living during young age, in maturity and old age. Improvement of the social communication. Expected results

Enabling the student to independently engage in sports and physical activeness, knowing the laws of physical culture, and healthy nutrition. Adopting knowledge of the structure, rules and principles of the training process and the singularities of the chosen kinesiological activity.

#### 11. Brief content:

- A. Program basic regular program
- - basketball, futsal, volleyball, handball, dances and fitness programs (aerobics, step-aerobics, pilates etc.)
- B. Program optional lessons
- Mountain hiking and camping, swimming, bike riding, roller glading, ice skating, skiing, ping-pong
- C. Program for students with special needs
- - physical activities depending on the student's condition/diagnosis
- D. Optional programs for students from higher years of studies
   E. Program sport competitions

# 12. **Methods of studying:**

Method of interactive teaching, demonstration, practice (synthetic, analytical, complex), method of sport training.

13.	Total a	vailable time:			60 classes			
14.	Organi	zation of the course			30- practice			
15.	Forms activiti	of teaching	15.1.	Theoretic	Total: 30 cal course	4 classes		
			15.2.	Practical group, se	course (frontal, equential, circular)	22 classes		
16.	6. Other forms of activities		16.1.		motoric capabilities (through ized motoric	4 classes		
			16.2.					
			16.3.					
17.	Metho	d of assessment	1					
	17.1	Tests						
	17.2	Seminar paper/project (oral/written presentation)	10					
	17.3	Active participation	10					
18.		g criteria / grade)						
19.		ement for signature king the final exam	Minimum 60% regular presence in class as well as active participation in the program					
20.	Langua	age of instruction	Mac	cedonian				
21.	Method	d of monitoring the of teaching process	Met	Method of monitoring, method of assessment etc.				

22.	Textbooks								
		Mandatory							
		1. Necessary literature is							
	22.1.	assigned by the profess							
		depending on the choic	e of						
		kinesiological activity							
	22.2.								
1.	Subject		FORENSIC MEDICINE						
2.	Code		MED.	-525					
3.	Study Pro	gram	Genera	al Medicine					
4.	Institution		Ss Cy	ril and Metho	odius University	, Med	ical Faculty,		
	(Unit, Inst	itute, Chair, Department)	Department of Forensic Medicine						
5.	Degree	of education	Integrated 6-year study						
	(first or se	cond cycle)							
6.	Study year	r/semester	Fifth(	V)/	7.Number of	4			
			Teen(2	X)	credits				
8.	Responsil	ole teacher	Prof. V	Verica Popos	ka, PhD, MD				
9.	Preconditions		Filled out condition for enrollment in the VII				VII		
			semes	ter					

# 10. Teaching goals:

- adoption and mastering of skills for determination of death, signs of death, cause of death and issuing a certificate of death
- gaining knowledge of indications for forensic autopsy, and differentiating violent from natural death
- mastering skills of description of mechanical injuries, chemical injuries, injuries due to heat, injuries due to cold, electrocution, lightening, asphyctic injuries and nutritive injuries
- mastering skills of filling out and issuing a medical certificate
- gaining knowledge of criminal law provisions concerning the medical profession (negligent treatment, professional secrecy, euthanasia, failure to provide medical assistance)

#### 11. Brief content:

#### **Theoretical course:**

- Thanatology. Agony, dying, death, and types of death. Signs of death uncertain signs, early post-mortem signs, and certain or later post-mortem signs. Estimation of time since death. Determination of death and cause of death.
- Mechanical injuries, general characteristics. Blunt-force trauma, sharp-force trauma (stab wounds, incised wounds), and gunshot wounds.
- Asphyctic injuries, mechanism, and general characteristics. Strangulation, suffocation, and compression.
- Injuries due to heat, injuries due to cold, injuries due to electrocution, injuries due to lightening, injuries due to microwave, laser, and atomic radiation
- Chemical injuries, poisons. Poisoning with corrosives, poisoning with metals, medicamentous poisoning, poisoning with pesticides, alcohol poisoning, and drugs
- Nutritive injuries
- Identification of living, and of deceased. DNA identification.
- Violent death murder, suicide, and accident
- Forensic gynecology, and sexology
- Medico-legal expertise, and medico-legal expert. Medico-legal expertise of injuries.
- Medico-legal comment on the provisions of the criminal law for negligence, negligent treatment, failure to provide medical assistance, quackery, professional secrecy

#### Practical lessons:

- Medico-legal autopsy. Performing technique of medico-legal autopsy. Goals and indications for medico-legal autopsy.
- Medical certificate
- Examination of victims of sexual abuse
- Identification of living and deceased
- Determination of death and issuing of certificate of death
- Medical criminalistics, expertise of blood stains, fiber and hair, sperm
- Forensic DNA technology

Seminar papers: Students themselves choose matter in the field of forensic medicine

# 12. Methods of studying: Interactive teaching, practical course and seminar papers 13. Total available time: 120 classes 14. Organization of the course 75 hours lectures-theoretical course, practical course, and seminars 45 hours home studying

			course, and semina	course, and seminars 45 hours home studying			
15.	Forms of teaching activities	15.1.	Theoretical course	49 classes			
		15.2.	Practical course,	25 classes			
			Seminars	1 class			
16.	Other forms of activities	16.1.	Practice	/			
		16.2.	Individual tasks	/			

17	Metho	dofo		mant	16.3.	Individual (home	e) learning	45 classes					
17.		1		ment	_			•					
	17.1	Tes	ts			riodic evaluation * Periodic evaluation			n exam				
		Fin	al ex	am	Oral exa	m* – max. 52							
					Practical	exam* – max. 20							
					integrati	Oral exam (integrow knowledge impact and the medical	ortant for und						
						Practical exam (a practical course a	-	_					
	17.2	pap	ninar er/pro al/wri		1 - 2			min	– max				
		pres	senta	tion)									
	17.3	Act						min –					
		part	ticipa	tion	Theoretical course 1-3								
					Practical course 3-5 Completed textbook mandato								
18.	Gradir	na crit	eria		Complet	up to 59 points			five) F				
10.	(points	_			fro	m 60 to 68 points			six) E				
	фотпа	<i>5 ,</i> <b>6</b> 14	ide)			m 69 to 76 points			ven) D				
						m 77 to 84 points		`	ight) C				
						m 85 to 92 points			nine) B				
					from 93 to 100 points 10 (ten) A								
19.	Requir	remen	t for	signature	The student is required to actively follow all of the planned								
	_			nal exam	activities.								
					Conditional criteria for assessment of knowledge: To get a signature, the student should attend theoretical classes, practical course and seminars and gain a minimum score.								
	_												
					In order to access the final exam student should pass the predicted continuous check or to win at least 30% of the total number of points on the preliminary exam. In the exam session, the student should first pass the preliminary exam and								
						approach the final							
						inal grade is forme							
						l on the sum of poi			15				
20.	Lanon	age o	f inst	ruction	Engli		in and marca	will					
21.				oring the		idance of students	to classes and	interactive particir	oation				
				ng process		coretical and practi		r	<del>-</del>				
22.	Textbo												
			Mai	ndatory					1				
			1.	Praktikun medicina	n po sudsk	a Janeska and as	ssociates	MARIS, Skopje	2010				
	22.	1.	2.	Forensic 1	Pathology	Dominick Dil J.M. DiMaio,	*		2001				

		Ado	ditional					
		1.	Sudska medicina	Tasić and associates	Zmaj, Novi 2006 Sad			
	22.2.	2.	Sudska medicina	Zećević and associates	Medicinska 2004 naklada, Zagreb			
		3.	Sudska medicina	Milovanovic	Medicinska 1990 knjiga			
1.	Subject	1		URGENT MEDICIN	E			
2.	Code			MED-514				
3.	Study Pro	gran	n	General Medicine				
4.	_	_	stitution ( Unit,	UKIM-Faculty of Med				
	,		r, Department)	Department of genera	l surgery			
5.	Education second cyc	cle)	degree (first or	Integrated cycle				
6.	Study year /semester			. ( . /	Number of 1 redits			
8.	8. Responsible teacher  Chief of department of surgery -  Doc. Dzonov Prof. d-r Sasko Jovev Article I. *Classes are perform from teachers from department of Interal r Surgery, Neurology, Dern Gynecology, Pediatric, Ophthalmology Otorhinolaryngology							
9.	<b>Preconditions:</b>			Filled condition for VII semester, passed first part of professional examination				
10.	_	_	s of the study program	n (competencies): of recognition of urgent co	nditions in medicine			
		511	to rearri the bubbs	2 110 gillion of digetit co				

- To learn the principles of careing in urgent situations and to overcome the skills in necessary therapis procedures, within their professional work.
- to know how to apply algorithms for reanimation issued by AHA (American Heart Association) and ERC (European Resuscitation Council).

# 11. Contents of the study program:

#### **Theoretical courses:** (13 classes)

- Urgent conditions in Cardiology
- Urgent conditions in Pulmonology
- Urgent conditions in GIT
- Urgent conditions in Toxicology
- Urgent conditions in Nephrology
- Urgent conditions in Pediatrics
- Urgent surgery conditions
- Urgent gynecology conditions
- Urgent conditions in Ophthalmology,
- Urgent conditions in ORL
- Urgent conditions in neurology
- Urgent conditions in dermatovenerology

# Seminar (4 classes)

- Cardiology (2 hours)
- Nephrology (1 hours)
- Surgery (1 hours)

Final exam

# **Practical course** (12 hours):

The practical course is mandatory and it is carried out in different departments of intensive treatment uder leadership od mentor professor.

The student is obliged to participate in all activities of caring and treatment on intensive treatment.

12.	Meth	ods of studying: I	nteracti	ve lectur	es, tutorials an	d seminars		
13.	Total	no. of hours:						
14.	Distri	bution of the avai	lable tin	ne				
15.	Type activi	of educational ty	15.1	Lectures	Lectures-theoretical 13 classes course			
				Practical clinical) seminars work	*	Practical: 12 hours Seminars 4 classes		
16.	Other	types of	16.1	Project a	assignments	hours		
	activities		16.2	Individual tasks		hours		
			16.3	Home st	udying			
17.	Asses	sment of knowled	ge:					
	17.1	Tests		Cont	inuous tests	points	minмах. 25 - 45	
				writte	en test	on of knowledge:  of all areas of emergency		

medicine

Practical exam \*

міп.-мах.

20 - 30

points

	I	I		I			
	17.2	Seminar work/pro (presentation: write		skills): exdiagnosis, the diagnosis, the The practical in the emerge and in the Int The student if the envisage to be able to	part of the exam vency centers in the ternal Medicine clins obligated to win a points for each paregistered points fwise, the test is con	vill be performed Surgical clinics nics. a minimum of art of the exam, for the final	
		oral)					
	17.3	Active participation	on	Theoretical c Practical cou		міп мах. 5 - 10 10 - 15	
				* Attending on theoretical course 51%-60% 5 points 61%-70% 6 points 71%-80% 7 points 81%- 90% 8 points 91%-100% 10 points			
				of 4 hours, For Attendan	1 course ((Every graduates actices: 2 points actices: 3 points	-	
18.	Know	ledge assessment	up	to 59 points	1	5 (five) F	
	criteri			to 68 points		6 (six) E	
	(poin	ts/grade)		to 76 points		7 (seven) D	
			77	to 84 points		8 (eight) C	
			85	to 92 points		9 (nine) B	
				to 100 points		10 (ten) A	
19.		ia for obtaining a ure and taking the xam	Conditional criteria for assessment of knowledge: To get a signature the student is required to attend the theoretical, practical training and seminars and to gain minimum scores				
			planned order to the requ exam in The the table activitie	activities, incl access the fina ired minimum one of the threassessment of e of estimates,	ged to gain a mining luding the continue all exam. If the stude score, they can accee exam sessions the subject is form based on the sum conspections and final	d examination in lent did not win cess on the final led according to of points from all	
20.		age of the course	English				
21.		od for evaluation of ality of education			evaluation of the s lved in the education	•	
	1						

	22.1	Manda	Mandatory textbooks										
	22.1	Р.бр	Автор		Наслов		Издавач	Година					
		1	Jeffrey Schaider Stephen R. Hayden Richard Wolfe Roger M. Barkin Peter Rosen	5 en	sen and barki minu nergency edicine consult		Tabernakul Skopje	- 2011					
		departments involved in teaching			uthorized lectur	es							
1.	Subje	ct			SOCIAL MEDICINE AND HEALTH ECONOMICS								
2.	Code				MED-527								
3.	Study	Progra	m		General medic	ine							
4.	Organizing Institution ( Unit, Institute, Chair, Department)				UKIM-Faculty of Social Medi		Medicine Cathedra	ı					
5.	Educa cycle)	tional	degree (first or seco	ond	Integrated cycl	le							
6.	Study	year /s	emester		Fifth/ X	7.	Number of credits	2					
8.	Respo	nsible t	eacher		Head of Cathedra: Prof. Dr. Fimka Tozija Responsible teacher: Prof. Dr. Mome Spasovski *Teaching is conducted by all the teachers of the Cathedra of Social Medicine								
9.	Prerec	quisites e:		Passed exams: Introduction to Medicine and Health Promotion									
10.	Teach	Introdu Organiz Health Health Quality	Is of the study progration to the basic prince attion and evaluation of Management Economics of Health Care of and health care of	ciple of the	(competencies s of Social Medic e health systems	s): cine	e population						

# 11. Contents of the study program:

#### Theoretical course::

- Social Medicine as a science, definition, social medical method, concepts, goals, areas of activity, study subject of social medicine
- Basic principles of organization of the health care and health service
- Levels of health care
- Health System organization and evaluation
- Health organizations and organization of health care system of the Republic of Macedonia
- Family importance for health, health needs and health care
- Health and social protection of vulnerable groups (children, school children and youth, women, elderly, workers, people with disabilities)
- Social diseases
- Social medical aspects of chronic diseases (cardiovascular diseases, malignant neoplasms, injuries and violence, drug addictions, diabetes mellitus)
- Social medical aspects of infectious diseases (tuberculosis, STDs, HIV /

#### AIDS)

- Health Economics
- Financing of health care
- System of health insurance and financing of health care in Macedonia
- Health management
- Planning of the development of health care
- Accreditation of health facilities
- Globalization and health
- Evaluation of health and health status of the population
- Informatics, statistics and health evidence

#### **Practical course:**

- Medical documentation and evidence. Basic medical documentation, daily and current health reports. Individual and aggregated reports. Legislation, specific reports-registers. ICD - meaning, structure and practical application
- Social medical diagnostics. Health indicators for monitoring and studying the health of the population.
- Methodology and preparation of health care in the community and for certain specific groups of the population. Health statistical research. Monitoring and assessment of health risks

Methods of studying: Lectures, exercises, seminars, field practical course 12. 13. Total no. of hours: 60 hours 14. Distribution of the available time 30 hours lectures, exercises 30 hours of home studying 15. **Type of educational** Lectures-theoretical 20 hours 15.1 activity course 15.2 Practical exercises. 10 hours seminars, team work, field work ... hours 16. Other types of 16.1 Project assignments activities Individual tasks 16.2 ... hours

			16.3	Home studying	30 hours				
17.	Asses points	sment of knowledg	ge:						
	17.1	Tests		minmax.  Total 18 - 30 points  3 Continuous tests  * Continuous verification of knowledge (Colloquium): 1 written test covers the first half of all areas of the content of the course of theoretical and practical training on the subject Social Medicine and Health					
		Final exam		Oral exam* minmax.  Points 30 – 50  * Oral part (integrative) - 3 questions of integrative knowledge, which is important for understanding whole subject and social-medical activity					

			, ,	pints; 9 = 43-46 points; 8 = points; 6 = 30-34 points)				
	17.2	Seminar work/pro	<u> </u>	minmax.				
		(presentation: wri	tten					
		and oral)	Seminar works	6 - 10				
			points					
	17.3	Active participation	on	minmax.				
			Theoretical course	points 3 - 5				
			Practical course	points 3 - 5				
			* Presence at the theoret	tical course				
			61-74% = 3  points					
			75 - 90% = 4  points					
			91-100% = 5  points					
				locks exercises of 3 hours)				
			2  blocks = 3  points					
			3  blocks = 5  points	3 blocks = 5 points				
18.		ledge assessment	up to 59 points	5 (five) F				
	criteri		60 to 68 points	6 (six) E				
	(poin	ts/grade)	69 to 76 points	7 (seven) D				
			77 to 84 points	8 (eight) C				
			85 to 92 points	9 (nine) B				
			93 to 100 points	10 (ten) A				

				Conditional criteria for assessment of knowledge: To get signature the student is required to attend the theoretical, practical course and seminars and to achieve minimum points To access to the final exam the student should pass the predicted continuous check and to achieve at least 60% of the total number of points predicted for the continuous check, whereby in the exam session first takes the unpassed continuous checks, and then access to the final exam. The grade of the subject is formed in accordance with the table of grades, based on the sum of points from all activities, continuous checks and final exam.					
20.	•	_	the course	Englis					
21.			valuation of		ymous student's evalu				
	-		education	and co	and collaborators involved in the educational activities				
22.	Litera								
		Mand	atory textbool						
			Autho	r	Title	Publisher	Year		
		1	Maxi-		Public Health and	Tabernakul	2011		
			RozenoLast	•••	Preventive				
	00.1		Robert W.		Medicine				
	22.1		Wallace and	1					
		2	others.		Social Medicine	Faculty of	2013		
		2	D.Donev	ri	Social Medicine	Faculty of Medicine	2013		
		M.Spasovsk F.Tozija		VI		in print			
			E.Kjosevska	a		in print			
-		Additi	ional literatur						
	22.2	Author			Title	Publisher	Year		

		1	Detels R., Beaglehole R.,		xford Textbook of blic health (5th		Oxford University Press	2009
			Lansang MA., Gulliford M.	-	ition)		Chrycisky Tress	
1.	Subje	ct			<b>PSYCHIATR</b>	XY		
2.	Code				MED-521			
3.	Study	Progra	am		General medic	ine		
4.	_	_	nstitution ( Unit, air, Department)		•	nic o	Medicine of Psychiatry, Skop	oje,
					Belgradska b.b. Department of Psychiatry and Medical Psychology,			
5.	Educa cycle)	tional	degree (first or seco	nd	Integrated cycle			
6.	Study	year /s	semester		fifth/tenth	7.	Number of credits	
8.	Respo	nsible i	teacher		Head of the Department prof. dr. Marija Raleva The teaching is performed by the professors the Department of Psychiatry and Medical			
9.	Preco	ndition	s:		Psychology Fulfilled preco	ondit	ions for VII semes	ter .

# 10. Teaching goals of the study program (competencies):

- Preparation of students to work with psychiatric patients
- Diagnosis and treatment of psychiatric patients
- Adoption of theoretical and practical knowledge in psychiatry (contact and communication with psychiatric patients, interviewing patients, differential diagnosis, treatment planning)

# 11. Contents of the study program:

#### Theoretical course::

- General psychopathology (disorders of psychological functions of consciousness, sensations and perceptions, emotions and affects, attention, thought process, delusions/illusions/hallucination, memory function, will and drives, cognitive functioning);
- Developmental stages and developmental disorders (speech and language disorders, learning disorders, pervasive disorders, mixed developmental disorders, attention deficit Hyperactivity Disorder)
- Intellectual disability
- Personality disorders
- Anxiety disorders and stress disorders (Generalized anxiety disorder, Dissociative disorder, Somatoform disorder, Phobic disorder, Obsessive – compulsive disorder, Posttraumatic stress disorder)
- Psychosis (Schizophrenia spectrum, clinical presentation, differential diagnosis and treatment);
- Affective spectrum (Recurrent depressive disorder, Bipolar disorder clinical presentation, differential diagnosis and treatment)
- Persistent delusional disorders
- Organic brain syndromes (acute brain disorders, chronic brain disorders)
- Eating disorders
- Substance abuse disorders and comorbidity ( alcohol abuse, illegal drug abuse)
- Treatment approach in psychiatry
- psychotherapy, psychotherapeutic approaches and techniques,
- psycho-pharmacotherapy Practical course:

Communication with psychiatric patients (taking medical history, psychiatric status, Identification of the leading symptoms, Psychological evaluation, Differential diagnosing, Treatment approaches in:

- · Disorders in childhood and adolescence
- Anxiety diorders
- Psychotic diorders
- Disorders in involutive period

	• Diagnostic methods in psychiatry (Psychological exploration, Neuro-immiging techniques, EEG)								
	• Treatment approaches in psychiatry (psychotherapy and pharmacotherapy)								
12.	Methods of studying: Interactive lectures, seminars, exercises								
13.	Total no. of hours:			90 hours					
14.	Distribution of the avail	able tin	ne						
15.	Type of educational	15.1	Lectures-theoretical		40 hours				
	activity		course						
		15.2	Practica	ls (laboratory,	50 hours				
			clinical)	,					
			seminar	s, team					
			work						
16.	Other types of	16.1	Project a	assignments	hours				
	activities	16.2	Individu	ıal tasks	hours				
		16.3	Home st	udying	hours				
17.	Assessment of knowledg	ge:							

	17.1	Tests		3 Continuous tests • Test 1 •	minmax. total points 16 – 30 points			
		Final exam		Subject:  Practical exam  Oral exam	minmax. 12-20 points 22-40 points			
	17.2	Seminar work/pro (presentation: write and oral)		Seminar works	minmax points			
	17.3	Active participation	on	Theoretical course Practical course	minmax. points 1-3 points 4-7			
18.		ledge assessment		up to 59 points	5 (five) F			
	criteri		60 to 68 points 6 (six) E					
	(points/grade)			69 to 76 points 7 (seven) D 77 to 84 points 8 (eight) C				
				77 to 84 points				
				85 to 92 points	9 (nine) B			
10	G :			93 to 100 points	10 (ten) A			
19.		ia for obtaining a		Conditional criteria for assessment of knowledge:  For obtaining a signature the student is required to attend				
	final e	ure and taking the	For obtaining a signature the student is required to attend					
	imarc	zam	the theoretical and practical lectures and to acquire minimum points.					
			For taking the final exam the student has to pass the test					
				to acquire minimum 51% of the t				
				ts from the tests. After passing th				
			takes the oral and practical exam. The grade is a sum of					
				all points acquired from the activities and parts of the				
•	_			am according to the table of grades.				
20.		age of the course	Engl		1 1 1			
21.		od for evaluation of		nymous student's evaluation of the	2			
22	-	ality of education	and collaborators involved in the educational activities					
22.	Litera 22.1	1	alza					
	22.1	Mandatory textboo	JKS					

			Author		Title			Publisher	Year
		1	Chadlovski G. and	Ps	ychiatry,	part	I	Prosvetno	2004
			al.	and	d part II			delo,	
								Skopje	
		2	Chadlovski G,	Me	edical psy	cholog	y	Prosvetno	2004
			Filipovska A. and					delo,	
			Belevska D.					Skopje	
		Additi	onal literature						
			Author		Title			Publisher	Year
	22.2		Sadock B., Sadock		Comprehensive			Tabernakul,	2012
	22.2		V.		textbook of		Skopje		
					ychiatry, <b>F</b>	Kaplan			
				and	d Sadock				
1.	1. Subject					HYGIENE			
2.	Code				MED 225				

3.	Study Program	General medicine					
4.	Organizing Institution ( Unit,	UKIM-Faculty of Medicine Cathedra					
	Institute, Chair, Department)	of Hygiene					
5.	<b>Educational degree (first or second</b>	Integrated cycle					
	cycle)						
6.	Study year/semester	Second/Fourth 7. Number of 5					
		credits					
8.	Responsible teacher	Dragan Gjorgjev, MD, PhD					
9.	Preconditions: None						
10.	Teaching goals of the study program (competencies):						
	• Environmental health, health risk assessment from air pollution, drinking water and surface water pollution, environmental health aspects of school environment						

# • Food safety and principles of proper nutrition of the population 11. Contents of the study program:

#### Theoretical course:

- -Hygiene (parts and objectives of the environmental health)
- Ecological concept of health, dose-response reaction, changes in the organism Some aspects of eco-toxicology, risk assessment and eco-oncology
- Environmental health
- Factors of the environment impact to health: physical, climate, radiation, noise Hygiene of air
- Environmental health aspects of drinking water and water supply
- Environmental health aspects of surface and waste waters
- Environmental health aspects of the soil and waste, with particular emphases on medical waste
- Hygiene of settlements and housing
- Environmental health aspects of school environment
- Characteristics of the school children morbidity
- Environmental health aspects health care institutions
- Hygiene of food safety and nutrition of population The basics of detotherapy

#### **Practical course:**

Environmental health: air pollution, methods of monitoring of air pollution and health statistics methods of monitoring of negative health effects; drinking water and monitoring of drinking water safety; ionizing radiation and health risk assessment; noise in environment, monitoring methodology and health risk assessment. - Hygiene in state of emergency: rapid detection and elimination of the risks of

	different environment media - School hygiene: implementation and interpretation of questionnaire for hygiene in school environment - Hygiene of food safety and nutrition: methods of assessment of food safety, nutritive value of meals, methods of assessments of nutritional status and dietotherapy						
12.	Methods of studying: Lecturing, exercises/seminars						
13.	Total no. of hours:			150 hours			
14.	Distribution of the available time			75 hours of lecturing, exercises and			
				seminars			
				75 hours of home learning			
15.	<b>Type of educational</b> 1 Lectures-the			oretical course	30 hours		
	activity	5					

1	1		1	D	45 1				
			5	Practicals (laboratory clinical),	45 hours				
			)	seminars, team					
			2	work					
16.			1	Project assignments	hours	hours			
			6	, <i>C</i>		nodis			
	1		Individual tasks	hours					
			6						
			2						
			1	Home studying	75 hours	75 hours			
			6	Tionic studying	75 Hours	13 HOUIS			
			3						
17.	Asses	sment of knowledg	ge:						
	points								
	17.1	Tests				minmax.			
				3 Continuous tests total points • Environmental health 21 35					
				<ul><li>Environmental health</li><li>Food Safety and Nut</li></ul>					
				1 ood Salety and Nutrition 13 23					
		Final exam		Subject: Oral integrative e	xam				
				Susjeet. Star megrative e		minmax. Oral			
				exam	15	25 points			
						•			
	17.2	Seminar			minmax.				
		work/project		Seminar works		points			
		(presentation:							
	written and oral)		212			min mov			
	17.3	Active participation	Ш	Theoretical course		minmax. points 1-5			
				Practical course	points 9-15				
18.	Know	ledge assessment		up to 59 points		5 (five) F			
	criteria: (points/grade)			60 to 68 points		6 (six) E			
			69 to 76 points	7 (seven) D					
			77 to 84 points		8 (eight) C				
			85 to 92 points	9 (nin					
				93 to 100 points		10 (ten) A			

19.	Criteria for obtaining a signature and taking the final exam		-	Conditional criteria for assessm student must participate at the the courses in order to score minimum signature. The minimum requirem follows:	oretical and pra n points to obta	ctical in		
				Theoretical course: 100% presence - 5 points 80% presence - 4 points 60% presence - 3 points 50% presence - 2 points 40% presence - 1 points				
				Practical course:  Presence at 11 exercise - 15 points  Presence at 10 exercise - 13 points  Presence at 9 exercise - 11 points  Presence at 8 exercises or less – the student will be reevaluated for some of the exercises he/she missed. If positively reevaluated - the student will gain 9 points.				
				For the student to approach to the final exam, he/she should score min. 60% from continuous knowledge assessment.  The final mark is formed as a sum of scores of all activities (presence at theoretical and practical course, continuous assessments and final exam)				
20.	,							
21.	8 8			Anonymous student's evaluation	of the subject, to	eachers		
	_		education	and collaborators involved in the	educational acti	vities		
22.	Litera							
		Mand	atory textbook			**		
		1	Author	Title	Publisher	Year		
		1	Wallace RB.	Public Health and Preventive Medicine	New York: McGraw- Hill	2008		
	22.1	2	Gjorgjev D, Kochubovs ki M, Kendrovski V, Ristovska G.	Hygiene and environmental health	Skopje: Faculty of Medicine	2008		
		3	Gjorgjev D, Kendrovski V, Ristovska G, Dimitrovska Z.	Hygiene of food safety and nutrition	Skopje: Faculty of Medicine	2008		
		4	Jackel JF.	Jekel's Epidemiology, Biostatistics, Preventive Medicine, Public Health, 3rd edition	Skopje: Tabernaku I	2010		
	22.2	Addit	ional literature					
	22.2		Author	Title	Publisher	Year		

		1	Tulchinski T.	The new p	ublic health		Skopje zbor;	e: Students	ki	2003
		2	Gjorgjev D, Kendrovski V, Tozija F.	Kragelj L, J, editors. I Public Hea teachers, re	t Studies. In:	s in For	Lage:H Jacobs Publish Compa http://w nz.hr/p ons.htm	hing any www.s bhsee/publ	icati	2010
1.	Subjec	ct	<u>I</u>		SURGERY					
2.	Code				MED 421					
3.	Study	Progran	n		General Medicine					
4.	Institu	tion			Ss Cyril and Methodius University, Medical Faculty,					
	(Unit,	Institut	e, Chair, Depart	ment)	Department of Anatomy					
5.	_		education d cycle)		Integrated 6-ye	ar study	1			
6.	Study	year/se	mester		Fourth (IV) and	d 7.Nı	ımber	of	20	
					Fifth (V) /	cred	its			
					Eight					
					(VII) and ninth	1				
					(IX)					
8.	Respo	nsible 1	teacher		Cheaf of Depa		of Surg	gery Doc.	d-	
	_				r Boro Dzonov					
9.		nditions			Filled condition for VII semester					
10.		ching g	oals: 1 master skills w	ithin ration	al diagnostics of	nd conta	mnoros	ry traatmo	ant o	f curgical

- to learn and master skills within rational diagnostics and contemporary treatment of surgical diseases
- to become familiar with the basic principles of diagnosing operational, preparation and treatment within the general surgery
- enable student to raconalo estimates and indicates acute surgical diseases, witch if timelu treatment is not diagnosed and treated may end fatally
- to enable the student to evaluate and treat surgival diseases of the central nervous system, neck and chest organs, cardiac and vascular diseases, digestive diseases, urological diseases, children's surgical disease, plastic and reconstructive corrections, locomotor system injuries and internal organs

#### **Theoretical course:**

- General and military surgery
- Disease and surgical treatment of the central nervous system
- Disease and surgical treatment of lung disorder
- Disease and surgical treatment of the disorder of cardiac and vascular diseases
- Disease and surgical treatment of the disorder of the digestive system
- Disease and surgical treatment of the disorder of the urogenital system
- Disease and surgical treatment of violations of children's diseases
- Disease and surgical treatment of the disorder of the skin with plastic and reconstructive surgery interventions
- Disease and surgical treatment of injuries locomotory system

#### **Practical classes:**

Mastering clinical skills and practical application of the gained theoretical knowledge

12. **Methods of studying:** Interactive lectures, tutorials and seminars

13.	Total available time:			600 classes	
14.	Organization of the course		335 classes - theoretical course, practical course, seminars 265 classes - home individual learning		
15.	Forms of teaching activities	15.1.	Theoretical course		103 classes
		15.2.	Practical c	course,	Practical: 180 classes
			Seminars		Seminars: 52 classes
			Team buil	ding	
16.	Other forms of activities	16.1.	Practice		classes
		16.2.	Individual	tasks	classes
		16.3.	Individual	(home) learning	265 classes

#### 17. **Method of assessment**

#### Continuous checking (test): 6 written test

Covers all areas of surgery in various combinations, depending on the group in which the student listens in the current schedule: 1. General Surgery and Traumatology

- 2. Thoracic vascular and cardiac surgery
- 3. Digestive surgery
- 4. Neurosurgery
- 5. Urology
- 6. Children and Plastic and Reconstructive Surgery

The students from one test can get: 2-4 points total for six tests: 12-24 points

#### **Final exam:** practical + oral

- 1. Practical part (according to the catalog od skills): examination of the patient, diagnosis, therapy **8-12 points** 
  - 2. Oral part (integrative) -4 questions that are not questioned in details, but integrative knowledge is important for understanding the entity of the case and the medical practice

**24-40** points

(for 10=40 points; for 9 = 37-39 points; for 8=34-36 points; for 7=31-33 points; for 6=28-30 points)

• The student is obligated to win a minimum of the envisaged points for each part of the exam, to be able to registered points for the final exam. Otherwise, the test is considered not passed.

#### \*attendance theoretical teaching

51% - 60% - 2 points

61% - 70% - 4 points

71% - 85% - 6 points

86% - 100% - 8 points

# \*\*Practical teaching (45 group exercises with a duration of 4 hours)

Attendance: 0.15 points

\*Assessment of the complete exam is gained based on the sum of the scores obtained from all the activities (lectures, tutorials, seminars, colloquia, final exam)

#### **Complete final exam:**

The exam represents a combination of colloquia that are not passed and the final exam. The student is obliged first to pass colloquiums witch during the year has not passed, and then proceed to take the final exam. If a student does not pass all colloquia, has not right to access the final exam.

18.	Grading criteria	up to 59 points	5 (five) F

	(points / grade)	from 60 t	to 68 points	(six) E	6		
	<u> </u>		<u> </u>	(811) 2			
		from 69 t	to 76 points		7 (seven) D		
			to 84 points		8 (eight) C		
		from 85 t	to 92 points		9 (nine) B		
		from 93 to	100 points		10 (ten) A		
19.	Requirement for signature		t is required to a	ctively follow all of	the planned		
	and taking the final exam	activities.		. 61			
				sessment of knowle	0		
		_	-	student should obtaind practical courses,			
		_	eminar paper;	d practical courses,	and to		
		•		ım, the student shou	ld obtain the		
				n continual assessme			
		(colloquiun	ns);				
				ined the minimum			
		continual	assessments, re the final exam.	e/she will be oblig	gated to pass		
				cording to the offici	al rating		
		_		points from all the a	•		
		continuous	continuous checks and the final exam.				
20.	Language of instruction	Macedonia	n				
21.	Method of monitoring the Student an		•	ion of the subject, th	e teachers		
	quality of teaching process	and collabo	porators participating in the teaching				
22.	Textbooks • General and Special	annagery Deaf	d a I Donovelsi				
	<ul><li>General and Special</li><li>Thoracic surgery: Pr</li></ul>						
	<ul> <li>Vascular surgery (sc</li> </ul>						
	<ul> <li>Plastic and Reconstr</li> </ul>	uctive Surgery	(script): Prof- d-				
	Neuro surgery: Prof.			ovkovski, Prof. d-r. I	I. Pangovski,		
	Prof. d-r K.Lozance,     Clinical Traumatolo			r S Joykovski Prof	d r		
	V.Georgiev, Prof. d-	•					
	Extended lectures of				ane vski		
	<ul> <li>General surgery: Prp</li> </ul>						
1.	Subject		SEMINAR / C	LINICAL PRACT	ICE		
2.	Code		MED 621				
3.	Study Program		General surgery	1			
4.	Institution		•	Methodius Univer	sity, Medical		
	(Unit, Institute, Chair, Depar	rtment)		ment of Anatomy			
5.	Degree of education (first		Integrated 6-year	ar study			
6.	or second cycle) Study year/semester		Fourth (IV) and	7.Number of	14		
0.	Study year/semester		Fifth (V)	/ credits	17		
			Eleventh(XI)				
			and twelfth (XI				
8.	Responsible teacher			rtment of Surgery De	oc.		
	D 1'.'		d-r Boro Dzono				
9.	Preconditions  Taggling goals:		Filled condition for X semester				
10	Teaching goals:						
10.	<ul><li>I eaching goals:</li><li>Introducing with diagn</li></ul>	octio and there-	antio magadas	in the field of eliminate	ool curaami		

#### Theoretical course:

- Filling surgical history
- Characteristic of history taking on every department
- Characteristic of clinical examination on the departments of:
- Abdominal Surgery
- Pediatric Surgery
- Thoracic vascular surgery
- Urology
- Neurosurgery
- Traumatology
- Plastic Surgery
- Intensive care
- Participation in the daily work in clinics
- Participation in everyday surgical work on the surgical departments
- Treatment of a patient in an unconscious state
- reanimation of a patient in an unconscious state (ventilatory and cardiac resuscitation)
- First aid for bleeding
- First aid for fractures
- Immobilization techniques (transport and permanent)
- bandaging wounds
- Tratman of wounds and their suture
- Incision of abscess
- Local treatment of burns
- Giving parenteral therapy and intravenous infusions
- Investigation of prostate with rectal tushe
- Placement of a nasogastric tube
- Endotracheal intubation
- See placing traheostomiska cannula
- Placement of a urinary catheter
- Assisting thoracic puncture
- see setting thoracic drainage
- Assist in reposition hernia
- Punctuates wrist
- Assist in the reposition of fracture
- Gives local anesthesia
- Assist with basic operations (hernia plastic, gall surgery gall bladder, appendix surgery)
- Investigation of large joints
- Other minor interventions

Clinical practice will be organized within 4 working weeks with a full time of 8 hours. There will be 2 tensus during the XI and XII semester. During the tensus, the departments and mentors change. Everyday activities of the student will be recorded in a separate log of activities that will be verified with the mentor's signature

## 12. **Methods of studying:**

- Participation in vocational meetings on the clinics
- Participation in morning visits
- Participation in the daily work of the departments at the Surgery Clinic
- Participation in surgical interventions in the field of surgery

#### **Knowledge and understanding:**

Student will acquire the theoretical knowledge in the field of surgery related to admission of patients in hospital setting, will acquaint the characteristics of history taking on each department, as well as the characteristics of clinical examination on each department. He will be introduced with the procedures for setting up a working diagnosis, treatment plan and surgical treatment of individual clinical cases.

#### **Crucial Skills:**

	The student will be able to and introduction to surgic basically to treat the emerg surgical skill. Also he/she w	al princ	ciples. A urgical p	after he finishes the patient, with the opp	practice he will know portunity to do a basic
13.	Total available time:			420 hours classes	
14.	Organization of the course			320 classes – hours of exercise 100 classes – domestic studying Teaching will take place within 4 weeks for 8 hours	
15.	Forms of teaching activities	15.1 15.2	Theoretical course  Practical course, Seminars Team building		/ classes Practical: 320 classes
16.	Other forms of activities	16.1	Practice	2	320 classes
		16.2	Individual tasks		theoretical knowledge in the field of surgery related to admission of patients in hospital setting, as well as the characteristics of clinical examination on each department.
		16.3	Individ	ual (home) learning	100 classes

#### 17. **Method of assessment** The student is required to attend and actively participate in ongoing turnuses Scoring the student activities Type of activity Po ints Min. Max. **Practice** 60 100 \*Practice: 20 days for 8 hours Attendance: 2.5 points Activity: 2.5 points The student assessment is descriptive (passed) The student should score at least 60 points. The student's 18. Grading criteria (points / grade) assessment is descriptive (passed) 19. Requirement for signature in order to get a signature, the student is required to attend and taking the final exam on 2 tensus during the XI and XII semester Conditional criteria for assessment of knowledge: In order to get a signature, the student should obtain minimum points, If the student has not obtained the minimum points, he/she will be obligated to pass them. The student's assessment is descriptive (passed) 20. Language of instruction Macedonian 21. Method of monitoring the Student anonymous evaluation of the subject, the teachers and quality of teaching process collaborators participating in the teaching 22. Textbooks • Bates' Clinical Reviews and Landing History, Authors: Lin. S. Bakli and Piter. G. Shilagi. 2012 1. Subject SEMINAR / MODULE - SURGERY 2. MED 622 Code Study Program General surgery 3. Ss Cyril and Methodius University, Medical 4. Institution (Unit, Institute, Chair, Department) Faculty, Department of Anatomy Degree education Integrated 6-year study 5. of (first or second cycle) Fourth (IV) and 7.Number 14 6. Study year/semester of Fifth (V) credits Eleventh(XI) and twelfth (XII) Cheaf of Department of Surgery Doc. 8. Responsible teacher d-r Boro Dzonov Preconditions Filled condition for X semester 9. 10. Teaching goals: • On seminars that are problematically conceptualized with case repot on patients, the current pathology is being processed. The student gets the opportunity to familiarize the wide surgical goal

#### Theoretical course:

- Theoretical process on cases for adequate topics
- Solving cases on adequate topics
- Problems conceptualized seminars combined with the case report
- teaching is organized for 5 days after 4 hours. will be organized 2 tours during the XI and XII semester

## 12. **Methods of studying:**

takes place mentoring principle with professors. The student actively participates in
discussions and public presentations of cases. The student will work each day by
system rotation in seminar groups of 20 students, there will be a meeting with experts,
will participate in the discussion "for" and "against". Will perform tutoring model
teaching by addressing cases

#### **Knowledge and understanding:**

• The student will acquire the knowledge to create a diagnostic algorithm, working diagnosis and surgical treatment plan of individual clinical case

#### **Crucial Skills:**

• The student will be able to make the proper choice of treatment for a particular disease with appropriate to the specifics of the individual patient

13.	Total available time:		30 hours classes		
14.	Organization of the course		20 classes - seminars	20 classes - seminars	
			10 classes – domestic	10 classes – domestic studying	
			Teaching will take pl	Teaching will take place within 5 days for 4	
			hours	·	
15.	Forms of teaching activities	15.1	Theoretical course	30 classes	

		15.2	Practical course, Seminars Team building	Practical: / Seminars: 20 classes
16.	Other forms of activities	16.1	Practice	/ classes
		16.2	Individual tasks	Seminar work (power point presentation)
		16.3	Individual (home) learning	10 classes

17.	Method of assessment				
	• Final exam: solving case (seminar work)  min. max.  written part: points 15 - 30 Oral part: points 15 - 30				
	*Seminar work / project (preser	ntation writte	en or oral)		
	• Active participation:  min. max.  Seminars: points 30 - 40  * The seminars are organized for 5 days after 4 hours.  Presence: 4 points				
	Activity: 4 points				
18.	Grading criteria (points / grade)		should score at least 60 points. The student's is descriptive (passed)		
19.	Requirement for signature and taking the final exam	and acti	er to get a signature, the student is required to attend tively participate in the seminars and to get the um predicted points for the seminar		
		Conditional criteria for assessment of knowledge:  In order to get a signature, the student should obtain			
		• If the str will be of (power)	m points, and to present a seminar paper; udent has not obtained the minimum points, he/she obligated to pass them before the final seminar point) presentation.  dent's assessment is descriptive (passed)		
20.	Language of instruction	Macedonia			
21.	Method of monitoring the quality of teaching process		nonymous evaluation of the subject, the teachers and tors participating in the teaching		
22.	Textbooks • Bates' Clinical Rev Piter. G. Shilagi. 2012	views and La	anding History, Authors: Lin. S. Bakli and		
1.	Subject		CLINICAL INVESTIGATION 1 AND 2		
2.	Code		MED 314		
3.	Study Program		General medicine		
4.	Institution (Unit, Institute, Chair, Departme	ent)	Ss Cyril and Methodius University, Medical Faculty, Department of Anatomy		
5.	Degree of education (first or second cycle)		Integrated 6-year study		
6.	Study year/semester		Third (III)/ Fifth 7.Number of 6+8 (VI) and Sixth credits		
8.	Responsible teacher		Cheaf of Department of Surgery - Doc. d-r Boro Dzonov, Cheaf of Department of Pediatcs - Prof. d-r Kata Martinova and Cheaf of Department of Internal medicina – Prof. d-r Kata Martinova		

9.	Preconditions	For Clinical trial 1:
		Obtained credits (passed exams) of Anatomy 3,
		Physiology 1, Pathopshysiology 1, signature of
		Physiology 2 and Microbiologu iwth
		Parasitology1
		For Clinical trial 2:
		Obtained credits (passed exams) of Biochemistry
		1, Physiology 2, signature of Pathology 1,
		Pathophysiology 2 and Clinial trial 1
10.	Teaching goals:	

Acquiring theoretical knowledge and skills in the examination of the patient and further examination in Clinical medicine

#### **Brief content:** 11.

#### Theoretical teaching:

- History (patient interrogation) in children and adults
- General status in children and adults
- Symptoms and signs of disease following the organic the systems
- Principles review of systems
- Special examinations of systems

#### Practical teaching:

Practical application of theoretical knowledge

#### 12. Methods of studying:

Interactive theoretical teaching, active work with patients

#### **Knowledge and understanding:**

Student will acquire the theoretical and practice knowledge in the field of Clinical Investigation to admission of patients in hospital setting, as well as the characteristics of clinical investigation on each department. He will be introduced with the procedures for setting up a working diagnosis, and treatment plan of individual clinical cases.

#### **Crucial Skills:**

The student will acquire the skills to master the methods and techniques for examination of patient and proper interpretation and other "paraclinical findings"

13.	Total available time:		102+116 hours classe	102+116 hours classes	
14.	Organization of the course		Theoretical teaching: Practical teaching: 12		
15.	Forms of teaching activities	15.1	Theoretical course	90 / classes	
		15.2	Practical course, Seminars Team building	Practical: 128 classes	
16.	Other forms of activities	16.1	Practice	/ classes	
		16.2	Individual tasks	interactive theoretical teaching, active work with patients	
		16.3	Individual (home) learning	/ classes	

#### 17. **Method of assessment**

The student is obligated to attend and to be included in the monitoring of all activities to get signet.

Scoring of student activities

Type of activity	Points		
	Min	Mah	
Theoretical teaching	1	5	
Practical teaching	12	16	
Final Exam - written	9	15	
Final exam – written + oral	38	64	
Total	60	100	

\*Presence Theory

51% - 60% - 2 points

61% - 70% - 4 points

71% - 80% - 6 points

81% - 90% - 8 points

91% - 1000% - 10 points

\*\*Practical teaching: each practical work with patients brings 0.4 points (128 exercises) Presence -0.5 points

To be active in the practical teaching -0.3 points

18.	Grading criteria (points / grade)	Assessment of the overall exam is obtained according to the table estimates, based on the sum of the scores obtained from all activities and points of each part of the final exam				
19.	Requirement for signature and taking the final exam	The student is obligated to attend and to be included in the monitoring of all activities to get signet.  To accede to the final exam the student should obstain a minimum score of theoretical and practical training				
		<ul> <li>Final exam: Written (test) + practical + oral</li> <li>Written part (test): 9 - 15 points</li> <li>Practical part: practical performance review 3 systems: 20-34 points</li> <li>Oral part: theoretical discussion of specific topics: 18-30 points</li> </ul>				
20.	Language of instruction	Macedonian				
21.	Method of monitoring the quality of teaching process	Student anonymous evaluation of the subject, the teachers and collaborators participating in the teaching				
22.	Textbooks					
	<ul> <li>Basic: Authorized teac</li> </ul>	hing of Chairs.				

# **ELECTIVE SUBJECTS**

1.	Title of the subject			SIOLOGY PERBARIO			HYPOBAI NT	RIC AN		
2.	Code MEDI-16									
3.	Study program		Gene	General medicine						
4.	Subject of the study program	-	UKI	M, Medical	Faculty	/ Sk	сорје			
5.	The level of educational prog	gram	Unde	ergraduate I	ntegrati	ive l	Program			
6.	Academy year / semester		Seco	nd / IV			mber TS credits	of1		
8.	Professor		Prof.	D-r Beti D	ejanova	t				
9.	Required criteria for the subj	ect	Passe	ed exam of	Physiol	ogy	1			
10.	<ul> <li>The aim of the study programmer.</li> <li>Physiology of high altimates the Physiology of hyperbare body.</li> </ul> The content of the study su	tude: Th ric condi	tions: The in	fluence of h						
12.	Program:  Barometric pressures a Parcial pressures of ox Oxygen saturation of h Aclimatization at oxyg Working capacity at hi Acute and chronic mou Barometric pressure ur The influence of high p and chronic oxygen intoxic Decompression. Keson Therapy with hyperbar Seminar program: Different  Methods of learning: Intersective teaching (theory)	ygen and emoglob en low p gh altitu- intain dis- nder the s partial pr ation. On ic disease ic oxyge	d carbon diox bine at different partial pressured sease sea level ressures on g xidative stresse. en.	ent altitude. ' re ases: nitroge	The influ	uenc	oxide and oxy	gen • Acute		
12	Interactive teaching (theory),	semina		20.1						
13.	Total period for studying			30 hours						
14.	Study time divisions		-							
15.	Forms of teaching activities	15.1	Theoretica	.l lessons	5	hou	ırs			
		15.2	Practical (laboratory seminars) work		nical,	min	nar work: 10	hours		
16.	Other forms of studying	16.1	Project tas	ks						
		16.2	Personal ta	ısk	5 ł	าดนา	rs			
	The state of the s	16.3								

	17.1	7.1 Tests			Writing test	p	oints	min-max 12 - 20
		Final e	xam		Oral exam	po	ints	min - ma 12 - 20
	17.2	Semina	ar exam		Seminar work		point	min - ma
	17.3	Active particij			Theoretical lesso		points points	min - max 12 - 2
18.	Criteri	a for esti	imation		to 59 points		•	5 (five) I
	(points	s/marks)		from 6	60 to 68 points			6 (six) E
				from 6	69 to 76 points			7 (seven) D
				from 7	77 to 84 points			8 (eight) C
				from 8	85 to 92 points			9 (nine) E
				from 9	3 to 100 points			10 (ten) A
19.	Requir	ed criter	ia to exam	To obtain obliged.	in signature, acti	ve presenc	e at theoretical	lessons are
20				needed.  The fina activitie	al mark is formed	d by summ	arizing the poin	its of certain
20.	I angu		1.	F 11.1				
	_	age of su	ıbject	English				
21.	perfor Metho	mance d of teac	abject ching activity	Student	anonym evaluat	tion of the	subject, the pr	ogram and th
21.	perfor	mance d of teac tion				tion of the	subject, the pr	ogram and th
	performation Methodological Methodol	mance d of teac tion ture		Student		tion of the	subject, the pr	ogram and th
	performation Methodological Methodol	mance d of teac tion ture	ching activity	Student teaching		tion of the	subject, the pr	ogram and th
	performation Methodological Methodol	mance d of teac tion ture	thing activity	Student teaching	gstuff	pecial M		Year
	performation Methodology Metho	mance d of teaction ture Oblige	ching activity  d literature  Autho  Dejanova	Student teaching	Title Physiology in sp conditions of hypobaric and	pecial M	Editor	Year
	performation Methodology Metho	mance d of teaction ture Oblige	ching activity  d literature  Autho  Dejanova  B.	Student teaching	Title Physiology in sp conditions of hypobaric and hyperbaric ambi	pecial M	Editor aric-S — Skopje	Year 2010 2000
	performation Methodology Metho	mance d of teaction ture Oblige	ching activity  d literature  Autho  Dejanova  B.  Guyton A.	Student teaching	Title Physiology in sp conditions of hypobaric and hyperbaric ambi	pecial M	Editor aric-S — Skopje	Year 2010 2000

1.	Title of the course			APPLICATION OF METHODS FOR SURVIVAL-SURVIVAL TIME ANALYSIS				
2.	Code		ME	EDI-33				
3.	Study program		Ger	General medicine a				
4.	The organizer of the program (unit, ie in department, department)	study nstitute,	Dej	UKIM-Medical faculty Department of epidemiology with biostatistics and medical.informatics				
5.	Degree of education (first or cycle)	r second	Inte	Integrated cycle				
6.	Academic year / semester			cond / IV rd, fourth, rh	7.	Number of ECTS credits	1	
8.	professor		pro	f. Rozalino	la Isja	novska		
9.	Prerequisites for enrolling th	ne subjec	et pas	sed the exar	n from	biostatistics		
10.	Objectives of the course pro • Provide knowledge and everyday medical practic Course content:	applicat			al-time	analysis methods	in	
	Theoretical instruction:  1. Introduction and general 2. Censored observations; 3. Analytical techniques ar 4. Life chart or survival tal 5. Kaplan-Meier's method 6. Risk in survival analysis 7. Comparison of two surv 8. Geham or generalized W 9. Log-rank test; 10. Regression model - Prop Practical classes: Computer application and p windosw); Seminar work: processing o	nd survivole; - Examina; iving cun Vilcoxon cortional	ral method nation; rves; test; hazard m	odels (Cox-:			ica for	
12.	Learning Methods: Interactive teaching (theoret	tical), exc	ercises, se	minar work				
13.	Total available time			30				
14.	Distribution of time							
15.	Forms of teaching activities	15.1	instruction			5		
		15.2		Exercises 10 (laboratory, Seminars 5 inical), seminars,				

16.	Other forms of activity	16.1	Project assignments	
		16.2	Individual tasks	5
		16.3	Home learning	5

17.	Metho	d of grac	ling					points
	17.1	Fir	Final exam			oral part points 20-	- 30	minmax.
	17.2	Semina (preser	ntation: wi	roject ritten	5	Seminar work	points	minmax. 20- 30
	17.3	Active	participation			Γheory Practical	points points	minmax 10 - 20 10 - 20
18.	Evaluation criteria (points / grade)				69 77	59 points 0 - 68 points 0 - 76 points 7 - 84 points 6 - 92 points		5 (five) 6 (six) 7 (seven) 3 8 (eight) 9 (nine)
				T	93	-100 points		10 (ten)
19.	•		or signature final exam	In orde theoret minimum. In orde written compile The grable, but the control of t	er to ical, am ser to papation	enter the final example in writing and pan.	a student is required and seminars and to me, the student show prepare a computering formed according the points from all the final exam.	win a  ld prepare a  zed  to the rating
20.	Langua			English				
21.	quality	of teach	onitoring the			onymous evaluatio orators participatin	n of the course and g in the teaching	the teachers
22.	Literat  22.1		Autho Aviva Petrie&Caro Sabin-	thor Aroline		Title edical Statistics at a	Publisher  Blackwell Scien	Year 2009
	22.2	Additio	onal literature					
	22.2	No	Autho	r		Title	Publisher	Year
1.	Subjec	:t					ARY EPIDEMIOI QUALITY AND I DENTS	
2.	Code					MEDI-37		

3.	Study Program		Ger	General Medicine					
4.	Organizing Institution ( Un Institute, Chair, Departme		med	Department of Epidemiology and Biostatistics with medical informatics, Medical faculty, University "St. Kiril and Metodij", Skopje, R.Macedonia					
5.	Educational degree (first o cycle)	r secon	d Inte	Integrated cycle					
6.	Study year/semester		по	избор 7.		Број на	ЕКТС		
8.	Responsible teacher		Pro	f. Vesna Velikj	Stefan	1 кредити novska, MD MSc	PhD		
9.	Preconditions for taking th	ie subje	ct No	ne					
10.	Teaching goals of the Aims			n (competencio	es):				
	<ul> <li>Studying modern, newly-</li> <li>Indicate ways to apply the</li> <li>Acquiring knowledge and</li> <li>Components of the right</li> </ul>	em in sc d skills f	ientific res or creating	search work scientific work		search			
11.	Content of the study progr	am:							
	<ul> <li>Theoretical classes:</li> <li>Introduction to the course in modern epidemiological</li> <li>A second / third generation</li> <li>Clinical epidemiological</li> <li>RAR method for rapid as</li> <li>PAR method</li> <li>Methods for increasing the Applying the components respondents</li> <li>Recognizing and overcommons</li> </ul>	al resear on epide studies sessmen ne repres s of the r	ch miological at and respo entativene right to hea	research methonse ass of the sample	od e equity	y) when selecting			
	<ul> <li>Practical classes:</li> <li>Exercise 1 - applying a second generation of epidemiological research</li> <li>Exercise 2 - applying for a third generation of epidemiological research</li> <li>Exercise 3 - applying the RAR method in practice</li> <li>Exercise 4 - applying the PAR method in practice</li> <li>Exercise 5 - increasing the representativeness of the sample</li> <li>Exercise 6 - showing a movie with experiences of vulnerable groups and discussion</li> <li>Exercise 7 - recognition of discrimination and disparities in scientific research</li> </ul>								
	Seminar work: application work	of mode	ern epiden	niological resea	irch in	the creation of	scientific		
12.	Methods of studying:								
	Interactive teaching, pract	ical cou	rse, semin	ars					
13.	Total number of hours:			30 hours					
14.	Distribution of available ti		-						
15.	Distribution of available time	15.1	Lectures-	-theoretical	5 h	ours			

15.2	Practical (laboratory, clinical), seminars, team work	Practical work 8 hours Seminars 2 hours
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1.	Subject	ENDOCRINE DYSREGUI IN CARDIAC FAILURE VISUALI	AND TECHNIQUES OF				
2.	Code	MEDI-38					
3.	Study Program	General Medicine					
4.	Institution (Unit, Institute, Chair, Department)	Ss Cyril and Methodius U Department of Pathophysiolo					
5.	Degree of education (first or second cycle)	Integrated 6-year study					
6.	Study year/semester	Third year/VI	7. Number of 1 credits				
8.	Responsible teacher	Assoc. Prof. Venjamin Majst	orov, PhD, MD				
9.	Preconditions	Exam of Pathophysiology 2	ology 1, Signature of				
10.	•	echanisms of endocrine dysreg for cardiac failure visualisation					

#### Theoretical course

- Pathophysiology of endocrine disorders in cardiac failure and mechanisms of release of various biomarkers
- Special review on pathophysiological mechanisms of symphatetic nervous system hyperreactivity in cardiac failure
- Techniques of visualisation and quantification of cardiac symphatetic hyperreactivity
- Application of visualisation techniques in risk stratification and cardiac failure prognosis

#### **Practical lessons**

• Discussion on disorders in cardiac failure, demonstration of some visualisation techniques and their application

#### Seminar

• Disorders in cardiac failure-work on separate parts

12.	Methods of studying:				
	Ex cathedra teaching and in and preparing presentation				
13.	Total available time:			30 classes	
14.	Organization of the course			course, seminars	tical course, practical individual learning
15.	Forms of teaching activities	15.1.	5.1. Theoretical course		5 classes
		15.2.	Practical Seminars	·	5 classes 5 classes
16.	Other forms of activities	16.1.	Practice		/
		16.2.	Individua	al tasks	/
		16.3.	Individua	al (home) learning	15 classes
17.	Method of assessment				_

17.1	Tests	Students are obliged to follow actively all recommended activities, including participation in the continuous testing of knowledge in order to get signature  Scoring the student's activities:						
		Activity	Minimum points	Maximum points				
		Lectures	10	20				
		Individual student's activity	10	20				
		Seminar paper	40	60				
		Total	60	100				
		Oral examination		min-max 15-25				

		Final exam		
	17.2	Seminar paper/project		min–max
			Seminar paper - written form/	25-35
		(oral/written presentation)	presentation	
	17.3	Active		min-max
		participation	Theoretical course	10-20
			Practical course	10-20
18.	Gradin	g criteria	up to 59 points	5 (five) F
	(points	/ grade)	from 60 to 68 points	6 (six) E
			from 69 to 76 points	7 (seven) D
			from 77 to 84 points	8 (eight) C
			from 85 to 92 points	9 (nine) B

				from 93	to 100	points			10 (ten) A			
19.	Requirement and taking		-	activities to take the according	The student is required to actively follow all of the planned activities, to write a seminar and prepare presentation in order to take the final exam. The grade in the final exam is given according to the grading table, and on basis of the sum of points obtained in all of the activities							
20.	Language o	of inst	ruction	English	s <b>h</b>							
21.	Method of a quality of to		•	Anonyme done at the				bject an	d lecturers	will b	pe	
22.	Textbooks											
	22.1.	Ma	ndatory									
		1.	Kasper D, Fa	auci A		Harrison's Principles of Internal Medicine						
		2.	Leonard S. I		Pathophysiology of Heart Disease			Wolters Kluwer				
		3.	Ziessman			Nuclear	medici	ne	Elsevier		2006	
			O'Malley Thrall			The Requisites			Mosby			
	22.2.	Add	litional									
		1.	McPhee SJ,	Ganong W	F:	Pathoph disease. introduc clinical	An ction to		Langee medical Books/M aw-Hill, York		2003	
1.	Subject					L PHYS	SIOLO	GY				
2.	Code				MEDI		/ TT*	h a - 1- '				
4.	Organizing	Study Program Organizing Institution ( Unit Institute, Chair, Department			UKIM Institu	•	of Med siology	licine and Ar	s nthropolog	у		
5.	Educationa cycle)	al deg	gree (first or s	econd	Department of physiology Integrated cycle							
6.	Study year	·/sem	ester		Secon	cond/II 7. Numb					1	

8.	Respo	nsible teacher			Prof. Sunchica Pe	trovska MD, PhD					
9.	Precor	nditions			Passed exam from	Physiology 1					
10.	Teachi	ing goals of the study To learn about the Gaining knowledg	e fetal p	ohys							
		organic systems di	_		•						
11.	Theore	Amnionic fluid and Physiology of the re Physiology of the gar Physiology of the union Physiology of th	fetal boo eart and o espiratory astrointed	dy facirc	luids ulatory system	e					
12.	Methods of studying: Interactive lectures, seminars										
13.		no. of hours:	active io	ctui	15						
14.		oution of the availab	le time		15 hours lectu	ires, 30					
1	2150116		10 011110		hours home stu						
15.	Type o	of educational y	15.1 15.2	co	ctures-theoretical urse minars,	10 hours 5 hours					
16.	Other	types of activities	16.1 16.2 16.3	In	oject assignments dividual tasks ome studying	hours hours 30 hours					
17.	Assess	ment of knowledge:		110	one studying	points					
17.	17.1	17.1  1. Seminar work/project presentation: written  2. Seminar work/project presentation: oral			minmax.	18-30 points min 30 -50points					
	17.2	Active participation	1		Theoretical course	minmax. points 12-20					
18.	· . ·				p to 59 points 0 to 68 points	5 (five) F 6 (six) E					
	(point	s/grade)			9 to 76 points 7 to 84 points	7 (seven) D 8 (eight) C					

					85 to 92 points	(	(nine) B							
				Ç	93 to 100 points	1	0 (ten) A							
19.		ire and t	aining a aking the	1.	<ol> <li>Conditional criteria for assessment of knowledge:         <ol> <li>The student is obliged to participate actively in the theoretical course in order to get a signature.</li> <li>In order to approach the final exam, the student is obliged to write and present a seminar paper.</li> </ol> </li> </ol>									
20.	Langua	age of th	e course	English	h									
21.	Metho	d for eva	aluation of ducation	Anony	Anonymous student's evaluation of the subject, teachers and collaborators involved in the educational activities									
22.	Literat		ducation	conaborators involved in the educational activities										
22.	Biterut		tory textbooks											
			Author		Title	Publisher	Year							
		1	S. Petrovska		Fiziologija na fetus	Medicinski fakultet, Skopje	2012							
	22.1	2	Gajton A		Medicinska fiziologija	Savremena administracija, Beograd	2008							
		3	Blackburn S	Γ	Maternal, fetal and neonatal physiology	d Elsevier	2007							
		4	Thorburn GD	)	Textbook of fetal physiology	Oxford University	1994							

1.	Subject	GENERAL PATHOPHYSIOLOGY OF HOMEOSTASIS						
2.	Code	MEDI-29						
3.	Study Program	General Medicine						
4.	Institution	Ss Cyril and Methodius University, Medical Faculty,						
	(Unit, Institute, Chair, Department)	Department of Pathophysiology						
5.	Degree of education (first or second cycle)	Integrated 6-year study						
6.	Study year/semester	End of summer semester (25 students)	7.Number of credits	1				
8.	Responsible teacher	Prof. Daniela Miladinova, PhD, MD						
9.	Preconditions	Exam of Physiology 1, Signat	ture of Pathophysiolog	y 1				

10.	Teaching goals:										
	Lectures: To get introduced w	ith tha m	ochonisms	of homoos	tatic exetor	ne bosi	n homoostasis				
	disorders types, kin										
	Practices:				-		1				
	Demonstration of g						. •				
1.1	Seminars: Integrate	ed approa	ich in studir	ng various	systems of	homeos	stas1s				
11.	Brief content: Theoretical course										
	homeostasis										
	<ul> <li>homeostatic system</li> </ul>	s properti	ies								
	general pathophysic										
	changes, oscilations mechanisms adapta	_	e feed-back	disruption	i, positive f	eed-bac	k, homeostatic				
	Practical lessons	uon									
	<ul> <li>genome homeostasi</li> </ul>	s, immun	ity as home	eostatic me	echanism						
12.	Methods of studying:										
	Classic - Ex cathedra teachi										
	seminars writting an present learning	ation, inc	dependent s	tudy by us	ing textboo	oks, com	iputer assisted				
13.	Total available time:			30 classe	es						
14.	Organization of the course			7 classes - theoretical course							
					cal course						
				5- semin	ars es - home ir	dividua	l learning				
15.	Forms of teaching activities	15.1.	Theoreti	cal course	s - nome n	7 class	•				
		15.2. Practical course, Se			eminars	3 class					
16.	Other forms of activities	16.1.	Practice			5 class	sses				
10.	Other forms of activities	16.1.	Individu	al tasks		/					
		16.3.		al (home)	learning	30 cla	classes				
17.	Method of assessment					1					
	17.1 Tests				•		mended activities,				
			ig participa get signatu		continuous	testing	of knowlidge in				
		order to	get signati	ii C							
		Scoring	the student	t's activitie	s:						
		Activ	rity		Minim	um	Maximum				
					point		pooints				
		Lectu			10		20				
		Indivactivi	idual stude	nt's	10		20				
			nar paper		40		60				
		Total			60		100				
		1 Otal			00		100				

	17.2	Seminar paper/pro (oral/wri presentat	oject tten		eminar paper - w eminar paper - pre	min – 12 12	max 20 20						
	17.3	Active p	articipation	inc	cluding participat der to get signatu	ion in thre	ow actively all rene continuous tes	ting of knowl	idge in				
					The grade in the final exam is given according to the grading table, and on basis of the sum of points obtained in all of the activities								
18.	Grading	g criteria	(points		up to 59	points			5 (five) F				
	/ grade)	)			from 60 to 68			(	6 (six) E				
					from 69 to 76	points		7 (	seven) D				
					from 77 to 84	points		8	(eight) C				
					from 85 to 92	-		9 (nine) B					
				from 93 to 100 points				0 (ten) A					
19.		ement for ing the fir		The student is required to actively follow all of the planned activities.									
20.	Langua	ge of inst	ruction		English								
21.	Method	l of monit		Attendance of students to classes and interactive participation in theoretical and practical lessons.									
22.	Textbo	oks											
		Mai	ndatory										
	22.1	. 1.	Serafimov	N:	Skopje, 1997	General pathophysiology of homeostasis,			1997				
		2.	Gamulin S	S et	all:	Path	nophysiology.	Jumena, Zagreb,	2005				
		Add	litional										
	22.2	. 1.	McPhee S	J, (	Ganong WF:	Pathophysiology of disease. An introduction to clinical medicine		Langee medical Books/McG aw-Hill, Nev York					

1.	Subject	PATHOPHYSIOLOGY OF INFLAMMATION							
2.	Code	MEDI-30							
3.	Study Program	General Medicine							
4.	Institution (Unit, Institute, Chair, Department)	Ss Cyril and Methodius University, Medical Faculty, Department of Pathophysiology							
5.	Degree of education (first or second cycle)	Integrated 6-year study							
6.	Study year/semester	End of summer semester (25 7.Number of credits 1 students)							
8.	Responsible teacher	Associate prof. Ana Ugrinska, PhD, MD							
9.	Preconditions	Exam of Physiology 1, Signature of Pathophysiology 1							

# 10. Teaching goals: Lectures:

**Lectures:** To get introduced with the etiology and the pathogenesis of acute and chronic inflammation and local and general reaction of the organism to the inflammation

**Practices:**demonstation of experimentaly induced inflammation in experimental animal

**Seminars**: Integrated approach in studing various pathophysiologial aspects of inflammation

#### 11. Brief content:

#### **Theoretical course:**

- etiology and pathogenesis of acute and chronic inflammation
- pathogenetic effects of inflammation
- inflammation changes
- manifestations and biochemical assessment of inflammation existence and intensity

#### **Practical lessons:**

• demonstration of articular infection and inflammation **Seminars**: chemical mediators of inflammation, biological inflammatory syndrome

## 12. **Methods of studying:**

Classic - Ex cathedra teaching and interactive teaching during lectures and practical trainings, seminars writting an presentation, independent study by using textbooks, computer assisted learning

13.	Total available time:			30 classes				
14.	Organization of the course			7 classes - theoretical course				
				3- practical course				
				5- seminars				
				30 classes - home individual learning				
15.	Forms of teaching activities	15.1.	Theoretic	cal course	7 classes			
	_							
		15.2.	Practical	course, Seminars	3 classes			

		15.2.	Practical course, Seminars	3 classes
				5 classes
16.	Other forms of activities	16.1.	Practice	/
		16.2.	Individual tasks	/
		16.3.	Individual (home) learning	30 classes
17.	Method of assessment			

	17.1	Tests		Students are obliged including participat order to get signature.	ion in the	-				
				Scoring the student'	s activitie	es:				
				Activity		Minimum points	Maximum			
				Lectures		10	20			
				Individual studen activity	20					
				Seminar paper		40	60			
				Total	100					
	17.2	Seminar					min – m	a v		
	17.2	paper/pro	iect	Seminar paper - w	12 20					
		(oral/writt	ten	Seminar paper - pre	12 20					
	17.3	Active par		Students are obliged						
				including participat		continuous tes	ting of knowlidg	ge in		
				order to get signatur	e					
				The grade in the fin and on basis of the		•				
18.	Gradin	g criteria (	points	up to 59	1		5 (five) F			
	/ grade	)		from 60 to 68	points		6 (six) E			
				from 69 to 76		7 (seven) D				
				from 77 to 84	•			ight) C		
				from 85 to 92	_			nine) B		
10	Di-	f	: 4	from 93 to 100	_	('1 f-11		(ten) A		
19.	_	ement for si	•	The student is reactivities.	quirea to	actively follow	vali of the plant	iea		
20.	Langua	age of instru	ıction	English						
21.		d of monito		Attendance of st	udents to	classes and inte	eractive particip	ation in		
		of teaching	•	theoretical and p			r ·· · · r			
22.	Textbo	oks								
			datory		T-		T			
	22.1	l. 1.	Gamulin S	et all:	Patho	physiology.	Jumena, 2014 Zagreb,			

1.	Subject		_	tional subjectional	et <b>IATOTHER</b>	RAPY	
2.	Code		ME	DI 84			
3.	Study Program		Ger	neral Medicir	ne		
4.	Institution (Unit, Institute, Chair, Depa	rtment)		•	Methodius nent of Anato	•	Medical
5.	Degree of education (first or second cycle)		Inte	grated 6-yea	r study		
6.	Study year/semester			e (IX) / e (IX)	7.Number credits	of 9	
8.	Responsible teacher			oc. Prof. Bilj cialist	ana Mitrevsk	ka, MD, PhD	), PRM
9.	Preconditions		No	ne			
11.	Teaching goals:  To get knowledge of the peloids);  To get knowledge of the To get knowledge with the application  To have the ability to apple To get to know the role of To get to know the role of To become familiar with thalassotherapy  Brief content:  Theoretical course:  Mineral waters, classificated Peloidotherapy, peloid form Physico-chemical propertion Climatotherapy, climatic form Thalassotherapy, coastal of Heliotherapy  Inhalation therapy  Spa treatments in Macedon	methods of the mineral ply mineral of climatot peloidoth ion, mechans, their des of peloi actors, climate, sea	of treatmer I waters, s al water in therapy in therapy, her anism of ac leposit, pre- id, methods mate condi	the treatment activity and etion, method paration and sand techniquitions and the	imatotherapy effects on the of the disease application •  ds of application regeneration ues for applicit on the original of the disease application in the original of the original original original original original original original original original o	e patients and sed and the i To know ab	d their njured
12.	Methods of studying:						
	theoretical lessons						
13.	Total available time:			30 classes			
14.	Organization of the course			15 classes -	theoretical c home individ	dual learning	9
15.	Forms of teaching activities	15.1.	Theoretic	cal course	15	classes	
		15.2.	Practical	course, Sem	inars		
16.	Other forms of activities	16.1.	Practice				
		16.2.	Individua	al tasks			
		16.3.	Individua	al (home) lea	rning 15	classes	
17.	Method of assessment						

	17.1	Tests	S	C	ontinual assessm	ent 18	-30 poi	nts		min – r	nax 1	
					Final test points neck)	18-30 (	(if they	have not p	assed the	e contin	uous	
					he student is oblig pints. In contrast,				nimum of the expected sidered.			
	17.2	(oral	inar er/project l/written entation)	1	1 seminar paper/p.	roject	points			min – 36-60		
	17.3	Acti		Ai 51 61 71 81	heoretical course ttending the theor 1% -60% 6 points 1% -70% 7 points 1% -80% 8 points 1% - 90% 9 points 1% - 100% 10 poi	S	essons			min – 6-	max -10	
18.	Gradir	ng crite	eria		up to 59					5 (	five) F	
	(points	s / grac	le)		from 60 to 68	points				6 (	six) E	
					from 69 to 76	points				7 (se	ven) D	
					from 77 to 84	points				8 (ei	ight) C	
					from 85 to 92	points				9 (r	nine) B	
					from 93 to 100	points				10 (	(ten) A	
19.			for signature e final exam		The student is reactivities.	equired	to acti	vely follov	v all of tl	he planr	ned	
					Conditional cri	teria f	or asse	ssment of	knowled	dge:		
					In order to get a	_			_	o attend	the	
					theoretical class	es and	to get a	minimum	points.			
					The grade for rating table, bas continuous chec	ed on t	he poin	ts from all		-		
20.	Langu	age of	instruction		English							
21.			onitoring the		Student anonym	nous ev	valuatio	n of the s	ubject a	nd the t	teachers	
			ching process		and collaborator				-			
22.	Textbo	ooks										
			Mandatory									
	22.	1.	1. Basics of	Phy	ysical Therapy	Erieta Dimi		Nikolik-	Laser Skopje	Jet, RM	2011	

	2.	Physical Therapy	Vukasin Mihajlovik	Obodsko	2002
				slovo, Rijeka Crnojevika	
				Crnojevika	
22.2.	Add	litional			

1.	Subject	EXERCISE THERAPY						
2.	Code	MEDI 78						
3.	Study Program	General Medicine						
4.	Institution (Unit, Institute, Chair, Department)	"Ss Cyril and Methodius" University, Faculty of Medicine, Institute of Physical medicine and rehabilitacion						
5.	Degree of education	Integrated 6-year study						
	(first or second cycle)							
6.	Study year/semester	Nine IX 7. Number of 1 credits						
8.	Responsible teacher Ass.Prof.Valentina Koevska, PhD,MD							
9.	Preconditions	Filled in enrollment in IX semester						
10.	<ul> <li>Teaching goals:</li> <li>Introduction to basic principles of the use of kinesitherapy in prophylaxis and in the process of medical rehabilitation.</li> <li>Introduction with kinesitherapy methods and the means of kinesitherapy</li> <li>Introduction with kinesitherapy as a therapeutic procedure with its own indications and contraindications</li> <li>Link the efficacy of kinesitherapy with other physical agents</li> </ul>							

# 11. Brief content: **Theoretical course:** The place of kinesitherapy in physical medicine and rehabilitation Biological effects of kinesitherapy on locomotor, nervous, cardiovascular, respiratory and digestive systems The influence of kinesitherapy on the psychic, social and professional position of the patient Goals of kinesitherapy Principles of kinesitherapy Means of kinesitherapy Dosage of kinesitherapy The starting position of the exercises Kinesitherapy equipment Methods of monitoring and recording in kinesitherapy Recreational gymnastics and kinesitherapy through sporting activities 12. **Methods of studying:**

Interactive teaching during lectures and independent study by using textbooks

30 classes

13.

Total available time:

14.	Organization of the course				15 classes - theoretical course		
					15 - home individual learning		
15.	. Forms of teaching activities		15.1	Theoreti	cal course	15 classes	
	activit	ies	15.2	Practical course, Seminars			
16.	16. Other forms of activities		16.1	Practice			
			16.2	Individu	al tasks		
			16.3	Individu learning	` ,	15 classes	
	Metho	d of assessment					
	17.1	Tests				min – max	
				Cont	inual assessmen	points18- 30	
		Final exam		Writt	en part	minmax. points 18-30	
					cted points. In co	I to achieve a minimum of the ontrast, the exam is considered	

	17.2	Seminar work / pr (presentation: wi and oral)	oject ritten	Seminar work -1	minmax points 36-60	
	17.3	Active participation		minmax. Theoretical instruction * Attended the theoretica 51% -60% 6 points 61% -70% 7 points 71% -80% 8 points 81% - 90% 9 points 91% - 100% 10 points	points 6-10 l lessons	
18.	Gradin	ng criteria	u	p to 59 points	5 (five) F	
	(points	s / grade)	from 60 to 68 points  from 69 to 76 points  from 77 to 84 points  from 85 to 92 points  from 93 to 100 points  6 0  8 (ei  10 (			
19.	_	rement for signature king the final exam	from 93 to 100 points 10 (ten) A  The student is required to actively follow all of the planned activities.  Conditional criteria for assessment of knowledge:			
			points in seminar In order minimur If the stu continua	both theoretical and practi	ual assessments; ninimum points in the	
20.	Langu	age of instruction	English			
21.		d of monitoring the of teaching process		anonymous evaluation of aborators participating in th	the subject and the teachers the teaching	
22.	Textbo	ooks				

Fundimentals kinesitherapy

Pergament Pablic, Skopje, R.M.

of

2010

22.1

22.2

Mandatory

Additional

Miroslava

Stojanovska

		1.	Erieta NikolicDimitrova	(K Ph Mo Re	ercise therapy inesitherapy), ysical edicine and habilitation		Skopje:Laserjet,	2011
		2.	Martin. D. Hofman et al. Eds De Lisa et al.	Terapeutical exercises, In Physical medicine and rehabilitation Principle and Practices				2011
		2	Eds. Randall Braddom	Physical Medicine and Rehabilitation Some Chapters				2011
1.	1. Subject				PHYSICAL AGENTS IN PAIN TREATMENT			
2.	. Code				MEDI 90			
3.		Study program			Study for Doctors of Medicine			
4.	Institution (Unit, Institute, Chair, Department)				Faculty of Med Institute for Phy	icine, ysical	dius" University, Medicine and Reha Medicine and Reha	
5.	5. Degree of education (first or second cycle)				Integrated 6-ye	ar stu	dy	
6.	Study year/semestar				Fifth/IX	7.	Number of ECTS credits	1
8.	Responsible teacher				Prof. Erieta Nikolikj Dimitrova, MD, MSc, PhD, PRM specialist			Sc, PhD,
9.	Precon	ditions			Requirement for	or the	ninth semester fulfi	lled

## 10. **Teaching goals:**

- To acquire knowledge for fundamentals of physical agents
- To acquire knowledge for physiological and therapeutic effects of some physical modalities
- To acquire knowledge about usage of these methods in treatment and research
- To acquire knowledge and training for applying physical modalities in treatment of acute pain
- To acquire knowledge and training for applying physical modalities in treatment of chronic pain

#### 11. **Brief content Theoretical course:** Fundamentals of electrotherapy Galvanic currents Iontophoresis Dyadinamic currents Interferential currents High Frequency currents (Short currents) Transcutaaneous electrical nerve stimulation Therapeutic ultrasound Low level laser therapy Low frequency electromagnetic field Shock wave therapy **Practical lessons:** 12. **Methods of studying:** Interactive teaching during lectures, independent study by using textbooks. 13. Total available time: 30 classes 14. Organization of the course 15 classes - theoretical course, 15 classes - home individual learning 15. Forms of teaching 15.1 Lectures-theoretical 15 classes activities lessons 15.2 Practical instructions, clinical lessons, team work 16. Other forms of activities 16.1 Practice 7 classess Individual tasks 16.2 16.3 Individual 8 classes home learning Method of assessment 17. 17.1 Tests min - maxContinual assessment - 1 (written) 18-30 points Final exam Final exam: final test + seminar Final test is written 18-30 points The grade in the final exam is given according to the grading table, and on the basis of the sum of points obtained in all of the activities.

17.3 Active participation  Theoretical course  6-10  18. Grading criteria (points / grade)  (points / grade)  Theoretical course  Grading criteria (points / grade)  From 60 to 68 points from 69 to 76 points from 85 to 92 points from 93 to 100 points  The student is required to actively follow all of tactivities.  Conditional criteria for assessment of knowled in order to get a signature, the student should observed to points in both theoretical courses. The grade in the final exam is given according to the final exam is giv	5 (five) F 6 (six) E 7 (seven) D 8 (eight) C 9 (nine) B 10 (ten) A the planned				
Theoretical course  18. Grading criteria (points / grade)  19. Requirement for signature and taking the final exam  19. Conditional criteria for assessment of knowled In order to get a signature, the student should obe points in both theoretical courses.  The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.	5 (five) F 6 (six) E 7 (seven) D 8 (eight) C 9 (nine) B 10 (ten) A the planned				
18. Grading criteria	5 (five) F 6 (six) E 7 (seven) D 8 (eight) C 9 (nine) B 10 (ten) A the planned				
from 60 to 68 points from 69 to 76 points from 85 to 92 points from 93 to 100 points  The student is required to actively follow all of tactivities.  Conditional criteria for assessment of knowle In order to get a signature, the student should ob points in both theoretical courses. The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.	6 (six) E 7 (seven) D 8 (eight) C 9 (nine) B 10 (ten) A the planned				
from 69 to 76 points from 77 to 84 points from 85 to 92 points from 93 to 100 points  The student is required to actively follow all of tactivities.  Conditional criteria for assessment of knowled In order to get a signature, the student should obspoints in both theoretical courses. The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.	7 (seven) D 8 (eight) C 9 (nine) B 10 (ten) A the planned				
from 69 to 76 points from 77 to 84 points from 85 to 92 points from 93 to 100 points  The student is required to actively follow all of tactivities.  Conditional criteria for assessment of knowled In order to get a signature, the student should obspoints in both theoretical courses. The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.	8 (eight) C 9 (nine) B 10 (ten) A the planned				
from 85 to 92 points  from 93 to 100 points  The student is required to actively follow all of tactivities.  Conditional criteria for assessment of knowle  In order to get a signature, the student should ob points in both theoretical courses.  The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.	9 (nine) B 10 (ten) A the planned				
from 93 to 100 points  19. Requirement for signature and taking the final exam  Conditional criteria for assessment of knowle  In order to get a signature, the student should ob points in both theoretical courses.  The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.	10 (ten) A the planned				
19. Requirement for signature and taking the final exam  Conditional criteria for assessment of knowle  In order to get a signature, the student should ob points in both theoretical courses.  The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.	the planned				
and taking the final exam  Conditional criteria for assessment of knowle  In order to get a signature, the student should ob points in both theoretical courses.  The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.	edge:				
In order to get a signature, the student should ob points in both theoretical courses.  The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.	J				
points in both theoretical courses.  The grade in the final exam is given according to table, and on the basis of the sum of points obtain activities.					
20. Language of instruction English	The grade in the final exam is given according to the grading table, and on the basis of the sum of points obtained in all of the				
	Student's anonymous evaluation of the subject and teaching				
quality of teaching process stuff who are involved in the education.	,				
22. Литература					
Задолжителна литература					
Р.бр Автор Наслов Издавач	Година				
22.1 Erieta Nikolikj- Dimitrova, Textbook: Fundamentals of Physical therapy Laserjet Skopje	e 2011				

		Доплн	ителна литература			
		Р.бр	Автор	Наслов	Издавач	Година
	22.2	1	Eds.J. De Lisa	In Physical Medicine and Rehabilitation. Principles and		2011
	22.2			Practice Some Chapters: - Therapeutic physical modalities		

	2 Eds. Randall Braddom	In Physical Medicine and Rehabilitation.  Some Chapters: -  Modalities of physical agencies							
1.	Subject	PHYSIOLOGY OF SLEEP							
2.	Code	MEDI-22							
3.	Study Program	General medicine							
4.	Organizing Institution ( Unit,	UKIM-Faculty of Medicine							
	Institute, Chair, Department)	Institute of Physiology and Anthropology							
5.	<b>Educational degree (first or second cycle)</b>	Integrated cycle							
6.	Study year /semester	Second/IV 7. Number of 1 credits							
8.	Responsible teacher	Prof. Sanja Mancevska MD, PhD							
9.	<b>Preconditions:</b>	Passed exam of Physiology 1							
11.	phases, the nature and the function of neurotransmitters and the factors that influence the circadian rhythm.  • To be able to recognize and differentiate between the basic sleep disorders  Contents of the study program:  Theoretical and practical courses:  • The state of alertness and sleep. Theories of the alertness -sleep cycle • Sleep stages: REM phase and slow wave (non REM) sleep and their characteristics • Registration of brain activity in a state of alertness and sleep • Neurotransmitters and sleep: the role of neurotransmitters in the maintenance of the alertness-sleepiness cycle (excitatory and inhibitory neurotransmitters) • Melatonin and circadial rhythm of sleep and its disorder due to time zones								
	<ul> <li>Sleep physiology and dream theories</li> <li>Physiological effects of sleep and its impact on the nervous system and othe organic systems</li> <li>Factors affecting sleep: diet, physical activity, age, etc.</li> <li>Insomnia and physiological approach to address it.</li> <li>The concept of insomnia, hypersomnia, and narcolepsy.</li> </ul> Seminar work: selected parts of physiology of sleep								

30 hours

13.

Total no. of hours:

14.	Distri	bution of the availab	ole time		15 hours lectur	es, laboratory	
					15 hours home		
15.	Type activit	of educational ty	15.1	Lectures	s-theoretical	5 hours	
		•	15.2	Practica	l (laboratory,	10 hours	
				clinical)			
				seminar	·		
16.	Othor	tymas of activities	16.1	team wo		hours	
10.	Other	types of activities			assignments		
			16.2	Individual tasks		5 hours	
			16.3	Home studying		10 hours	
17.		sment of knowledge:	;			points	
	17.1	Tests				min max.	
				Writ	ten exam	total 12-20 points	
		Final exam		Oral	exam	minmax.	
				Orar	CAUIII	12-20 point	
	17.2	Seminar work/proje	ect			min max.	
		(presentation: writted oral)	en and	Semi point	nar works	24- 40	
	17.3	Active participation	1			minmax.	
				Theo	retical course	points 12-20	
18.		ledge assessment		up to 59	9 points	5 (five) F	
	criteria	a:		60 to 68	•	6 (six) E	
	(points/grade)			69 to 70	•	7 (seven) D	
	-			77 to 84	•	8 (eight) C	
			85 to 92 points 93 to 100 points			9 (nine) B	
19.	Cuitoui	is for abtaining a	Come		_	10 (ten) A	
19.		ia for obtaining a ure and taking the xam	To ob	Conditional criteria for assessment of knowledge:  To obtain signature, active presence at theoretical lessons are obliged.			
			To er	nter the ex	am, seminar wor	k (writing text and presenting)	
			neede	ed.			
			The f		is formed by sur	mmarizing the points of certain	
20.	Langu	age of the course	Engli	sh			
21	N ( a41: -	1.61	Linguisii				

21.

22.

Method for evaluation of the

quality of education

Literature

Anonymous student's evaluation of the subject, teachers and

collaborators involved in the educational activities

		Manda	atory textbooks						
			Author		Title		Publisher	Year	
		1	Widmaier E, Raff H, Strang K.	Ph Me	nder's Human ysiology: T echanisms of Bo nction.	he dy	McGraw -Hill Education	2013	
	22.1	2	Guyton AC, Hall JE.	Te Ph	xtbook of Medic ysiology 12 th ition.	cal	Elsevier, London,	2011	
		3	Naiman R.	sci sle	Healing night: The cience and spirit of leeping, dreaming, nd awaking.		Barnes and Noble	2006	
1.	Subject				SPORT PHYS	SIOI	LOGY		
2.	Code			MEDI 112					
3.	Study Program				General medici	ne / I	High schools		
4.		_	nstitution ( Unit,		UKIM-Faculty of Medicine				
	Institu	ite, Cha	ir, Department)		Institute of Physiology and Anthropology Department of physiology				
5.	Educa cycle)	tional d	legree (first or second		Integrated cycle				
6.	Study	year /so	emester		Second/II	7.	Number of credits	1	
8.	Respo	nsible t	eacher		Prof. Sunchica Petrovska MD, PhD				
9.		nditions			Passed exam f	rom	Physiology 1		
10.	Teach	Gaini	ls of the study program ng knowledge on infovascular, respiratory	luer	nce of physical				
	•		ng knowledge on mu		_				
	•	To lea	arn about the physio	logi	cal mechanism	sof	recovering		
	•		ng knowledge on ing g physical exercise ar				L	body	
		uurm	g physical exercise an	iu g	chaci ana phys	ical	EVELCIPE		

### Theoretical course:

11.

- Muscle strength, muscle power and endurance; muscle energetic systems
- Oxygen consumption and respiratory ventilation during exercise
- Oxygen consumption and cardiac output during exercise
- Oxygen diffusion capacity in athletes
- Physical activity as a stress factor
- Fatigue and types of fatigue (biochemical changes and phases of muscle fatigue)
- The basic physiological mechanisms of recovery process (reconstitution of glycogenlactic acid system, recovery of the aerobic system)
- Thermoregulation during physical exercise under conditions of high and low external temperature
- Gender differences in muscle strength, muscle power, cardiorespiratory endurance, endocrinology and metabolism.

12.		ods of studying: Inter	ractive l	ectu				
13.		no. of hours:			15			
14.	Distri	bution of the availal	ole time		15 hours lectures, 30 hours home studying			
15.		Type of educational activity		15.1 Lectures-theoretical course		10 hours		
				Seminars,		5 hours		
16.	Other	Other types of activities		Pı	roject assignments	hours		
				In	dividual tasks	hours		
			16.3	Н	ome studying	30 hours		
17.	Assess	sment of knowledge:				points		
	17.1	<ol> <li>Seminar work/pr presentation: writte</li> <li>Seminar work/pr presentation: oral</li> </ol>	oject		minmax.	18-30 points min 30 -50points		
	17.2	Active participation	1		Theoretical course	minmax. points 12-20		
18.		ledge assessment		u	p to 59 points	5 (five) F		
	criteria	a:			0 to 68 points	6 (six) E		
	(point	s/grade)			9 to 76 points	7 (seven) D		
		<i>5</i> /			7 to 84 points	8 (eight) C		
					5 to 92 points	9 (nine) B		
				93	to 100 points	10 (ten) A		

19.	signatu final ex	taining a aking the		<ul> <li>Conditional criteria for assessment of knowledge:</li> <li>3. The student is obliged to participate actively in the theoretical course in order to get a signature.</li> <li>4. In order to approach the final exam, the student is obliged to write and present a seminar paper.</li> </ul> English						
20.			ne course					0.1 11 1		
21.	Method for evaluation of							on of the subject, teach	ers and	
22.	the quality of education Literature			COL	avoral	iors involved il	i tile et	iucational activities		
	Mandatory textbo			books						
		TYTATIO		Author		Title		Publisher	Year	
		1	S. Petro	ovska		snovni ziologija na sp	na ortot	Mariv, Skopje	2010	
	22.1	2	Gajton	A		fedicinska ziologija		Savremena administracija, Beograd	2008	
		3	Foss M SJ.	L, Keteya	Fox s physiological basis for exercise and sport		WCB/Mc Graw- Hill	1998		
Subje	ct				OCCUPATIONAL DISEASES AND WORK-RELATED DISEASES					
Study	progra	am		General r	nedici	ne				
Code				MEDI-78						
Study				By choice						
Semes					Winter/Summer, up to 20 students					
	no. of h	ours			15					
Credi		uhica4		1 Elective						
	of the sunditions			None						
	ucted by				nt of (	Occupational n	nedicin	e		
	onsible t					. Jordan Minov		<u> </u>		
Addr		Cuciici						e of the Republic of Ma	acedonia.	
				WHO Co	llabora	ative Center, II	Maked	donska Brigada 43, 10		
Key v	vords				el. +389 2621 428, e-mail occhemed@onnet.com  Iedical Faculty, undergraduate studies, elective subject, ecupational diseases, work related diseases					

Aims of the study	<ul> <li>Studying the pathogenesis, diagnostics, treatment and prevention of occupational diseases and work-related diseases</li> <li>Case reports and demonstration of epidemiological and clinical research of the occupational diseases and workrelated diseases</li> <li>Seminar work in occupational pathology</li> </ul>
Brief content	Theoretical course
	<ul> <li>Occupational diseases and work-related diseases – definition, legislation, pathogenesis, diagnostics, treatment and prevention</li> <li>Occupational diseases and work-related diseases of the lungs</li> <li>Occupational diseases of the liver</li> <li>Occupational diseases of the locomotor system</li> <li>Occupational malignant neoplasm Practical course</li> <li>Asthma related to work/occupational asthma – case report</li> <li>Lung diseases related to asbestos exposition – case report</li> <li>Occupational contact dermatitis – case report</li> <li>Occupational lead poisoning – case report</li> <li>Occupational noise damages – case report</li> <li>Seminar papers</li> <li>COPD related to professional exposition</li> <li>Occupational zoonoses</li> </ul>
Organization	Theoretical course: 5 hours
	Practical course: 5 hours Seminars:
	5 hours

#### The student is obliged to participate actively in all anticipated activities **Specific recommendations** for the course in order to get a signature. Points for the activities of the student: **Activity type Points** Min Max Theoretical course 10 20 10 20 Practical course 40 60 Seminar **Total:** 60 100 The grading of the student is descriptive (passed the exam) **Textbooks** Basic: Avtorizirani predavanja od predavacite Bislimovska Karadzinska J, Minov J, Risteska-Kuc S, Mijakoski D, Stoleski S. Medicina na trudot (vo faza na recenzija) Additional: Minov J. Bolesti na belite drobovi I plevrata povrzani so profesionalnata ekspozicija. Skopje: Pristopi, Institut za medicina na trudot na R. Makedonija, 2009 1. Subject INTENSIVE CARE MEDICINE 2. Code MEDI-22 3. **Study Program** General medicine Organizing Institution (Unit, **UKIM-Faculty of Medicine** 4. Institute, Chair, Department) Department of anesthesiology, reanimation and intensive care 5. Integrated cycle Educational degree (first or second cycle) 6. Study year /semester V/Ninthtwelfth 7. Number of 1 credits Responsible teacher Prof. Mirjana Shosholcheva, MD, PhD 8.

Passed exam in anesthesiology and reanimation

9.

10.

**Preconditions:** 

**Teaching goals of the study program (competencies):** 

- The student will be acquainted with the basics of intensive care, critically ill patients and the required skills for their treatment
- Elements of cardio-pulmonary resuscitation
- The student will be acquainted with the principles of care and intensive treatment of the critically ill patients and with the skills needed in intensive care medicine

## 11. Contents of the study program:

13.

Total no. of hours:

### Theoretical and practical courses:

- Intensive care medicine, organization of the intensive care unit, monitoring of the vital parameters
- Critical conditions as a result of hypoxia
- Critical conditions caused by circulatory disorders
- Critical conditions with disorders of the body fluids homeostasis
- Critical conditions and consciousness disorders
- Critical conditions caused by digestive system disorders
- Critical conditions caused by trauma
- Critical conditions caused by head injuries
- Critical conditions caused by chest/thorax injuries
- Critical conditions caused by abdominal emergencies
- Critical conditions caused by cardiac arrest in pregnant women
- Critical conditions in cases of intoxications, burns, terminal extremes, drowning, electric shock
- Artificial ventilation, central vein pathways, ports

12.	Methods	of	studying	Listening,	demonstration,	practical	course	and	acquiring	skills,
	discussion	/co	nsultation v	with the lecti	urers					

30 hours

14.	Distribution of the available time			20 hours lectures, practical 15 hours home studying		
15	Type of educational	Lectures-theoretical		10 hours		
13.	activity	15.1	course	theoretical	10 110413	
	activity	15.2		skills in ICU,	10 hours	
		13.2		b,	10 110 0110	
		16.0	Home st	udying	10 hours	

17.	Assessment of knowledge:	points
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17.1	Tests		min max.
		Written exam	total 12-20 points
	Final exam	Oral exam	minmax.
		Oral exam	12-20 point
17.2	Seminar work/project		min max.
	(presentation: written and	Seminar works	24- 40
	oral)	points	

17.3	Active participation		minmax.
		Theoretical course	points 12-20

18.	Knowledge assessment				up to 59 points 5 (fiv			5 (five) F
10.	criteria				60 to 68 points			6 (six) E
					69 to 76 points			7 (seven) D
	(point	s/grade)			77 to 84 points			8 (eight) C
					85 to 92 points			9 (nine) B
				C	93 to 100 points			10 (ten) A
19.	Criteria	a for obt	aining a			r asses	ssment of knowled	\ /
	signature and taking the final exam  Language of the course			To obtain signature, active presence at theoretical lessons are obliged.  To enter the exam, seminar work (writing text and presenting) is needed.  The final mark is formed by summarizing the points of certain activities.				
20.					h			
21.	0 0					valuati	on of the subject, te	eachers and
						ducational activities		
22.	Literat							
		Manda	tory textbook	S				
			Autho				Publisher	Year
		1	Andrew Bersten, and Soni	D. d Neil		Care	Elsevier Health Sciences	2013
	22.1	2	The ICU Bo	ok	Paul L. Marino.		Lippincott Williams and Wilkins,	2013
		3	Critical care	;	Jesse B. Hall, Gregory A. Sch	ımidt	Nc Graw Hill, Medical	2006
1.	Subje	ct					RKERS FOR DL S OF DISEASES	AGNOSIS
2.	Code				MEDI-10			
3.	Study	progra	m		General med	licine		
4.			the study pro	ogram	Ss. Cyril and	l Metho	odius	
			• •	_	University -			
	(Unit,	ı.e.					chemistry and	
	Inctitu	te Don	artment)		Clinical Bio	chemis	stry	
5.			artinent) ication (first	or	Integrated cy	ıcle		
].		e or eat d cycle )		OI.	integrated cy	CIC		
6.		-	ar/semester		Second/IV	7.	Number	1
0.	ricauc	mic yea	41, 5011105001		Second/1 v	′.	of	1
							ECTS	
							credits	
8.	Respo	nsible t	eacher		Prof. Dr. Son	nja Top	Į.	

	Preconditions		Signature from Biochemistry 1 and Biochemistry 2						
10.	<ul><li>Aims of the course prog</li><li>Teaching/studying o</li><li>Demonstration and</li></ul>	of enzyme	s importar	nt for medica					
11.	Contents of the course program: Theoretical course:								
	<ul> <li>Principles of enzymology</li> <li>Isoenzymes and their significance</li> <li>Methods for determination of enzymes</li> <li>Enzymes important for diagnosis and prognosis of cardiovascular diseases</li> <li>Enzymes important for diagnosis and prognosis of hepatic diseases</li> <li>Enzymes in the neonatal period</li> <li>Enzymes as tumor markers</li> <li>Practical course: <ul> <li>Tests for determination of enzymes and isoenzymes, continual, discontinual, electrophoretic</li> </ul> </li> <li>Seminar paper: <ul> <li>Selected chapters from enzymology</li> </ul> </li> </ul>								
12.	0	ory), pract	rical exerc	ises, seminar	naper				
	Interactive teaching (the	ory), pract	1		paper				
12. 13. 14.	Interactive teaching (the Total no. of hours		ours	30 hours 15 hours of t	eaching, exercises,	, seminars			
13.	Interactive teaching (the Total no. of hours  Distribution of the tota  Organization of the	15.1	Lectures -	30 hours 15 hours of t 15 hours stud- l course	eaching, exercises, lying at home 5 hours				
13. 14.	Interactive teaching (the Total no. of hours  Distribution of the tota  Organization of the	15.1 15.2	Durs  Lectures -	30 hours 15 hours of t 15 hours stud 16 course 17 course 17 course 17 course 17 course	eaching, exercises, lying at home	rs			
13. 14.	Interactive teaching (the Total no. of hours  Distribution of the tota  Organization of the course program	15.1 15.2	Lectures - theoretical Practical ((laborator clinical), seminars,	30 hours 15 hours of t 15 hours stud 16 course 17 course 17 course 17 course 18 course 19 course 19 course 19 course 19 course 19 course	eaching, exercises, dying at home  5 hours  Exercises 5 hours	rs			
13. 14.	Interactive teaching (the Total no. of hours  Distribution of the tota  Organization of the course program	15.1 15.2 15.2 es 16.1 16.2	Lectures - theoretica Practical of (laborator clinical), seminars, work Project tas Individual	30 hours 15 hours of t 15 hours stud 11 course course cy, team	eaching, exercises, dying at home  5 hours  Exercises 5 hours Seminars 5 hour	rs			
13. 14. 15.	Interactive teaching (the Total no. of hours  Distribution of the tota  Organization of the course program  Other forms of activities	15.1 15.2 15.2 es 16.1 16.2	Lectures - theoretical Practical (laborator clinical), seminars, work Project tas	30 hours 15 hours of t 15 hours stud 11 course course cy, team	eaching, exercises, dying at home  5 hours  Exercises 5 hours Seminars 5 hours hours	rs ·s			
13. 14.	Interactive teaching (the Total no. of hours  Distribution of the tota  Organization of the course program  Other forms of activities  Method of assessment	15.1 15.2 15.2 es 16.1 16.2	Lectures - theoretica Practical of (laborator clinical), seminars, work Project tas Individual	30 hours 15 hours of t 15 hours stud 11 course course cy, team	eaching, exercises, dying at home  5 hours  Exercises 5 hours  Seminars 5 hours  hours  hours  15 hours	rs rs point			
13. 14. 15.	Interactive teaching (the Total no. of hours  Distribution of the tota  Organization of the course program  Other forms of activities	15.1 15.2 15.2 es 16.1 16.2	Lectures - theoretica Practical of (laborator clinical), seminars, work Project tas Individual	30 hours 15 hours of t 15 hours stud 11 course course cy, team	eaching, exercises, dying at home  5 hours  Exercises 5 hours  Seminars 5 hours  hours  hours  15 hours	rs rs point:			
13. 14. 15.	Interactive teaching (the Total no. of hours  Distribution of the tota  Organization of the course program  Other forms of activities  Method of assessment	15.1 15.2 15.2 es 16.1 16.2	Lectures - theoretica Practical of (laborator clinical), seminars, work Project tas Individual	30 hours 15 hours of t 15 hours stud 16 course course ry, team sks 1 tasks at home	eaching, exercises, dying at home  5 hours  Exercises 5 hours  Seminars 5 hours  hours  hours  15 hours	rs rs point:			

					Practical cou	rse	points	10 - 20		
					Up to 59			- 4.5		
18.	Assess	sment c	riteria		points			5 (five) F		
			.		60 to 68 points			6 (six) E		
	(point	s/grade	;)		69 to 76 points			7 (seven) D		
			-		77 to 84 points			8 (eight) C		
			-		85 to 92 points			9 (nine) B		
_	Caral	4: C		from	93 to 100 points			10 (ten) A		
19.	signat	ure and	r obtaining I taking the	In order number of the grades	Conditional criteria: In order to get a signature, a student needs to attend theoretical, practical classes and seminars as well as to obtain a minimum number of points  In order to approach the final exam the student should submit a seminar paper in a written form and to prepare PPS.  The grade for the subject is obtained according to the table of grades and based on the sum of points gained in all of the activities, continual assessment of knowledge and final exam.					
	Language of teaching and learning  Method of monitoring the quality of teaching			Macedonian  Students' anonymous evaluation of the subject and the teachers and associates participating in the teaching process.						
22.	Textb	ooks		1						
		Mand	atory textbo	oks						
		Num.	Autho	or	Title		Publisher	Year		
	22.1	1	David M. Ha	awcroft	Diagnostic enzymology		Willey, London	1987		
		Addit	 ional textboo	oks						
		Num.	Autho	or	Title		Publisher	Year		
	22.2	1 Nada T Majkić Singh		Klinička enz T. ć-		ologija	AID Praktikum	1993		
		/project (prese oral)	 	en and	Seminar pap	er	points	25 - 35		
	17.3	Active partici			Theoretical c	ourse	points	minmax. 10 - 20		

Subject:	NUTRITIONAL ANTHROPOLOGY
Study program:	General medicine
Semester:	Summer semester, the last week of June, in the premises of Department of physiology and anthropology, up to 10 students
Total no. of hours	15
Credits:	1
Type of the subject:	Elective
<b>Preconditions:</b>	Completed course in physiology 1 and signature from physiology 2
Program author:	Prof. Lidija Cingo Todorovska, PhD MD
Conducted by:	Department of physiology
Responsible teacher:	Prof. Lidija Cingo Todorovska, PhD MD todorovskalidija@ymail.com
Address:	Department of MEP physiology and anthropology, Medical faculty, 50 Divizija No. 6, 1000, Skopje tell: + 389 2 3111 774; fax: + 389 2 3113 627
Key words:	Medical faculty, graduated study, elective subject, nutritional anthropology, anthropometry, nutritional status.
Aims of the study:	To acquire the basic knowledge about the opportunities of anthropology and its methods in evaluation of nutritional status of individuals and population, and to master the methodology and procedures of nutritional assessment and nutritional monitoring.
Brief content:	<ol> <li>Introduction to nutritional anthropology: definition; objective; methods; application of anthropometry in clinical diagnostics.</li> <li>Nutritional anthropometry: methodology; anthropological measurements, indexes and systems of classification.</li> <li>Anthropometric standards: historical data; purposes; methodology of creation and procedures of manipulation with anthropological standards.</li> <li>Nutritional assessment of an individual: doctrine and methodology of nutritional assessment; qualitative and quantitative graduation of nutritional status; principles and procedure of nutritional monitoring.</li> <li>Assessment of nutritional risks in population: methodology of assessment; creating nutritional intervention of the population; creating national programs for prevention. Practical course:</li> <li>Taking anthropometric measurements; calculation of anthropometric indexes; comparing with anthropometric standards and interpretation of the results.</li> <li>Analysis of the nutritional status; body composition; somatotype; growth and body development.</li> <li>Global assessment and gradation of the nutritional status according to anthropometry.</li> <li>Analysis of anthropological and nutritional status according to software programs. Integrative seminar: application of acquired knowledge and skills in actual clinical case.</li> </ol>
Organization:	Theoretical course: 4 hours Practical course: 6 hours Seminar: 5 hours
Methods of studying	Interaktiv (theoretical) lectures, practical lectures (practical exercises) and integrative seminar.

	1. Pelto HG, Pelto JP, Messer E. Research Methods in Nutritional Anthropology. The United Nations University, 1989.
Textbooks:	WHO Technical Report Series no. 854. Physical status: The use and interpretation of anthropometry. Report of the WHO Expert Committee, 1995.
	2. L. Todorovska: Nutritional anthropology. Textbook for students of medicine, Skopje, 2013.

1.	Subject	CONTEMPO	RARY	APPROA	CH IN				
		TREATMEN	Γ OF E	EPILEPSIES					
2.	Code	MEDI - 3							
3.	Study Program	General medical	General medicine						
4.	Organizing Institution ( Unit,	UKIM-Faculty	UKIM-Faculty of Medicine						
	Institute, Chair, Department)	Department of neurology							
5.	Educational degree (first or second	Integrated cycl	e						
	cycle)								
6.	Study year /semester	Second/IV	7.	Number of	1				
				credits					
8.	Responsible teacher	Ass. Prof. Gordana Kiteva-Trenchevska							
9.	Preconditions:	None	None						

### 10. Teaching goals of the study program (competencies):

- Introduction to the basic therapeutic principles in epilepsy treatment according to the guidelines given by the International League Against Epilepsy (ILAE), recommended by the Commission for diagnostic and therapeutic strategy of the ILAE, in accordance with evidence based medicine
- Introduction to the contemporary diagnostic protocols for epilepsies, classification of epilepsies, choosing the proper treatment for specific types of seizures and epilepsy, as well as the pharmacological properties of different antiepileptic drugs (AEDs)

# 11. Contents of the study program: Theoretical course:

- Correct diagnosis and classification of epilepsies: (Commission for diagnostic and therapeutic strategy of the ILAE- revision), therapeutic principles for epilepsies of the American Academy of neurology (AAN)
- Antiepileptic drugs –first line AEDs -indications and pharmacological characteristics
- New generation of AEDs indications and pharmacological characteristics
- Other treatment options for epilepsies non pharmacological (ketogenic diet, vagus nerve stimulation –VNS, surgery for refractory epilepsies)

### **Practical course:**

- -working with patients with different types of seizures and epilepsies
- -working with patients with focal epilepsies (medical history and treatment specificity)
- working with patients with generalized epilepsies (medical history and treatment specificity)
- Introduction to the specific features of different diagnostic methods (EEG, CT and MRI of the brain)
- project presentations by the students on different subjects:
- -Contemporary diagnostic methods in epilepsies
- -Contemporary classification of epilepsies
- AEDs (old and new generations)
- Refractory epilepsy
- clinical research of antiepileptic drugs

13.	Ŭ	s, seminar no. of ho				1.	5 hour	:s			
14.			the availab	le time		5	5 hours lectures, 5 hours practical course,				
						la	borato	ry, 5 ł	ours project presentati	on	
15.		Type of educational			Le	ectures-th	eoretic	al	5 hours		
	activity				co	ourse					
						na ati aa 1	501		50 hours		
				13.2	15.2 Practical		laboratory,		30 Hours		
					cli	inical), se		•			
					team work						
16.	Other	types of	activities	16.1	Pr	roject assi	gnmen	ts	5 hours		
17.	Assess	ment of	knowledge:						D	oints	
- / •	17.1 Tests									n max.	
						Theoreti	ical cou	ırse	total 5-	-10 points	
		Final ex	kam		_	Practica	l cours	e		nmax.	
	17.2	Comin	n xxxon1-/:-	ot.						-10 point	
	1 3					Final eva	min max. Final exam 20 - 35 points				
		(presen	tution. White	ii uiia o	and oran				20 55 points		
	17.3	Active	participation						mi	nmax.	
						Project p	present	ation:	points 3	30-45	
						Total			mir	n – max	
						Total			60 -		
	Knowl		up to 59 points 5 (five) F								
	criteria	ı:				60 to 68 pc				6 (six)	
	(point	s/grade)			69 to 76 points				7 (seven) 1		
	(1	B		77 to 84 points					8 (eight)		
					85 to 92 points					9 (nine) 1	
19.	Criteri	a for obta	aining a	Conc		to 100 po		20000	sment of knowledge:	10 (ten) A	
1).			king the fina	1							
	exam				To obtain signature, active presence at theoretical lessons are						
				obliged.							
					To enter the exam, seminar work (writing text and presenting) is						
				need	ed.						
				The f	Γhe final mark is formed by summarizing the points of certain						
				activ	ities	S.					
20	I a	ogo of (1		Trac - 1'	L.						
20. 21.		age of the	e course luation of the	Engli		oue etude	nt's ar	aluatio	on of the subject, teach	ere and	
41.		of educa			•				lucational activities	ci s allu	
22.	Literat			1							
		Mandat	ory textbook	S					_		
	22.1		Auth			T	itle		Publisher	Year	
	22.1	1	www.ilae.o	·9						1	

1											
1.	Subje	ect	•		E	PIDEMIOL	OGY	AND	HEALTI		
						ANAGEM			NAGERIAI		
						EPIDEMIOLOGY)					
2.	Code					EDI - 98					
3.	Study	y Progra	am		G	eneral medic	cine				
-											
4.			stitution ( U			IM-Faculty					
	Institu	ite, Chai	ir, Departm	ent)		Department of Epidemiology, Biostatistics and Medical Informatics					
5.	Educa	tional d	ognos (finat a	24 G000 PG							
٥.	cycle)	uonai d	egree (first o	or second	1 1110	egrated cycle	ð				
6.	Study year /semester				Fif	th/X	7.	Number of	1		
0.	Study	year /se	inestei		1.11	III/A	7.	credits	1		
8.	Responsible teacher			Pro	of Dr Draga	n Dani	ilovski, MD, PhD				
9.		nditions			No		III Daii	ilovski, ivib, i ilb			
0.			s of the stud	v nrogra							
							Health 1	Management, Mar	nagerial		
			and Manager		_	,		<i>C</i> ,	C		
1.			e study prog	gram:							
	Theor	etical co	urse:								
	•		ovement of P	ublic Hea	alth Care						
	•	e-Heal	,								
	•		d Care" in Pu	ublic Hea	lth						
	•		th players;								
	•		more effect		•	<b>.</b>					
	•		tion and desc	•	Health N	Tanagement					
	•	_	er responsibi erial epidem		Haalth m	anagamant					
	•						Hum	an Resources, fina	ıncial		
		manag		gramming,	managen	ient, control	, 110111	an resources, min	.iiCiui		
	•	_	tive decision	making	in Health	Care					
		11100810									
	Exerci	ises									
2.	Metho	ds of sti	udying: Inter	active le	ctures nr	actice and v	ideo er	ntrv			
3.		no. of ho		active ice	ctures, pro	15 hours	ideo ei	iti y			
4.			f the availab	le time			ectures	, Seimnars: 4 hour	rs		
5.		of educa		15.1	Lectures	-theoretical		11 hours	.5		
	activit			13.1	course	theoretical		11 Hours			
		·		15.2	Practical			4 hours			
				· <b>-</b>		laboratory,		· <del></del>			
						clinical), seminars,					
					team wo						
6.	Other	types of	f activities	16.1							
7.	Assess	ment of	knowledge:						points		
	17.1	Tests									
					Theo	retical cours	e		35-55		
		Final a	vom		Sami	nor nonor		,	25 45		

Seminar paper

25-45

Final exam

	Language of the course			The final mark is formed by summarizing the points of certain activities.					
20.	Language of the course			English					
21.		Method for evaluation of the			nous student's evaluation		hers and		
	quality of education			collabor	ators involved in the ed	lucational activities			
22.	Literat	ure							
		Manda	tory textbooks						
	1 Epidemiolog Basic Textbo			r	Title	Publisher	Year		
				y:					
				ok,					
			2007 Skopje						
	22.1	2	Specialized						
			Epidemiolog	y 2009					
			Skopje						
					T		10.100		
					Total		50-100		
					The assessment of k	nowledge is descript	ive: passed/		
19.	Critori	for obt	oinin o o	Conditi					
19.			aining a	Conaitie	onal criteria for assess	sment of knowledge:			
	signature and taking the final exam			To obtai	n signature, active pres	sence at theoretical les	ssons are		
	111101 02	14111		obliged.					
					the exam, seminar we	ork (writing text and	presenting)		
				is neede	d.				

2.	Code		ME	MEDI - 99					
3.	Study Program		Ger	neral medici	ne				
4.	Organizing Institution ( U	nit,	UK	IM-Faculty	of Me	dicine			
	Institute, Chair, Departme	ent)	Uni	versity Clin	ic for l	Plastic and Reco	nstructive		
			Sur	Surgery					
5.	Educational degree (first o	r secon	d Inte	grated cycle	e				
	cycle)								
6.	Study year /semester			h/X	7.	Number of	1		
						credits			
8.	Responsible teacher		Pro	f. Smilja Tu	dzarov	a-Gjorgova			
9.	Preconditions: None								
10.	Teaching goals of the study program (competencies):								
	<ul> <li>Introduction to surg</li> </ul>	ical tech	iniques for	aesthetic op	peratio	ns			
	<ul> <li>Practical application</li> </ul>	ı - worki	ing with pa	atients in a s	mall ro	oom   Seminar			
	paper								
11.	Contents of the study prog								
	Theoretical hours: lecture								
	<b>Practical hours:</b> live surger								
	<b>Practice:</b> Work in aseptic s								
12.	Methods of studying: Inter	active le	ectures, pra		ideo er	ntry			
13.	Total no. of hours:			15 hours					
14.	Distribution of the availab	le time				s, 5 hours prac			
		r				rs project presen	tation		
15.	Type of educational	15.1	Lectures-	-theoretical		5 hours			
	activity		course						
		15.2	Practical			10 hours			
				laboratory,					
				seminars,					
			team wor	<b>k</b>					

16.	Other	types of activities 16.1		
17.	Assess	sment of knowledge:		points
	17.1	Tests	Theoretical course tot	min max. al 5-25 points
		Final exam	Practical course	minmax. 20-25 point
	17.2	Seminar work/project (presentation: written and oral)	Seminar pape 35 - 50 points	min max.
	17.3	Active participation		
			Total	min – max 60 - 100
			The student assessment is descriptive.	

19.			aining a	Condit	ion	al criteria for as	ssessm	ent of knowledge:		
	signatu final ex		aking the		To obtain signature, active presence at theoretical lessons are obliged.					
				To ente		ne exam, semina	r worl	(writing text and	presenting)	
				The final mark is formed by summarizing the points of certain activities.						
20.	Language of the course			English	l					
21.	Method for evaluation of the			Anonyı	nou	s student's evalu	ation	of the subject, teach	ers and	
	quality of education			collabo	rato	ors involved in th	e educ	cational activities		
22.	Literat	ure								
		tory textbooks								
			Author			Title		Publisher	Year	
	22.1	1	www.ilae.org	3						
	22.1									
1.	Subjec	:t				NON PH	IARM	IACOLOGICAL	AND	
	3					PHARMACO			PY ON	
						DIABETES T	YPE 2	2		
2.	Code					MEDI - 98				
3.		Prograi				General medici				
4.			stitution ( Un	,		UKIM-Faculty				
	Institu	te, Chai	ir, Departmen	it)			crinol	ogy, diabetes and n	netabolism	
	17.1	4:1 1	( <b>6</b>	1		diseases;	_			
5.	eguca cycle)	uonai d	egree (first or	second		Integrated cycl	e			
6.	Study year /semester					Fifth/X	7.	Number of credits	1	
8.		nsible te				Prof. Tatjana Milenkovikj, PhD MD				
9.	Precor	ditions	1			None				
10.	Teachi	ing goal	s of the study	progran	n (c	ompetencies):				

- -to make a diet plan for the patient with diabetes
- -to define appropriate amount of physical activity for each patient
- -to advice adequate oral therapy to patients with diabetes type 2
- -to follow the effect of the advised oral therapy
- -to combine the oral hypoglycaemias
- to make an indication for passing on an insulin therapy

#### 11. **Contents of the study program: Theoretical course:** -basic nutrients and their maintenance in the components of healthy nutrition -daily calorie needs, depending on individual needs -basic and advanced counting of carbon hydrates, depending on the individual needs of the patient -basic groups of oral hypoglycaemias, their indications, contraindications and their potential treatment -proper combination of oral hypoglycaemias -indications for a transfer to an insulin therapy, types of insulin and insulin regime **Practical** course: - exercises for planning and implementing non pharmacological and pharmacological treatment in type 2 diabetes 12. Methods of studying: Interactive lectures, practice and video entry 13. Total no. of hours: 15 hours 14. Distribution of the available time 5 hours lectures, 5 hours practical course, laboratory, 5 hours project presentation 7 hours 15. Type of educational 15.1 Lectures-theoretical activity course 15.2 Practical (laboratory, 8 hours clinical), seminars, team work 16. Other types of activities 16.1 17. Assessment of knowledge: points 17.1 Tests Theoretical course 14 Final exam Practical course 26 17.2 Final exam 60 17.3 Active participation Total 100 Final exam: -The test contains 20 questions. 15 are multiple choice questions and 5 are fill in the blank questions: 50% from the points of the final exam - 5 practical cases will be given to the student for which he/she will have to suggest a diet and the right treatment: 50% from the points of the final exam The assessment of knowledge is descriptive: passed/ failed the exam 19. Criteria for obtaining a Conditional criteria for assessment of knowledge: signature and taking the To obtain signature, active presence at theoretical lessons are final exam

				is need	er the exam, semina led. nal mark is formed by				
20.	Langu	age of the	he course	Englisl	h		_		
21.	Metho	Method for evaluation of the			mous student's evalu		•	chers and	
	quality	of educ	cation	collaborators involved in the educational activities					
22.	Literat	ure							
		Mand	atory textbooks	}					
			Author	r	Title		Publisher	Year	
		1	Vladimir		Intern medicine				
			Serafimov ar	ıd	Skopje				
	22.1		coworkers						
	22.1	2	Tatjana		Education in t	the		2006	
		Milenkovikj.			treatment of peop	ple			
					with diabetes, Skop	pje			

1.	Subject	PAIN THERAPY
2.	Code	MEDI - 65
3.	Study Program	General medicine
4.	Organizing Institution ( Unit,	UKIM-Faculty of Medicine
	Institute, Chair, Department)	KARIL
5.	Educational degree (first or second	Integrated cycle
	cycle)	

6.	Study year /semester	Fifth/X	7.	Number of	1				
				credits					
8.	Responsible teacher	Prof. Jasminka	Nance	va, PhD MD					
9.	Preconditions:	Completed cou	rse in A	Anesthesiology and	1				
		reanimation							
10.	Teaching goals of the study program (c	ompetencies):							
	Introducing the treatment of acute and chi	onic pain. Stude	ents wil	l learn how to treat	t pain when				
	it is the primary symptom. They will be introduced with the treatment of painful syndrome,								
	pain evaluation skills, early steps of pain scale, special treatment of various types of pain and								
	proper use of analgesics in treatment of pain within general medicine.								
11.	Contents of the study program:								
	Theoretical course:								
	Pain, clinical implications, types, segment	- ·	•	-	•				
	for pain treatment, strategy for treatment			•					
	analgesia, back pain, the most common ty								
	analgesia for the treatment of acute and cl	_	ting chi	onic pain and tech	niques,				
	blocks, method of application, palliative of	are and pain							
		<del></del>							
12.	Methods of studying: Listening, demons	tration, practical	perfor	mance and skills, o	discussion				
	and consultation with lecturers								
13.	Total no. of hours:	15 hours							
14.	Distribution of the available time	8 hours le	ctures,	Seimnars: 7 hours					

15.	Type of educational activity		15.1	Lectures-theoretical course  Practical (stay at pain		8 hours 7 hours
			13.2		inic),	/ nours
16.	Other types of activities		16.1			
17.	Assess	sment of knowledge:	l			points
	17.1 Tests				Theoretical course	10-20
					Practical course	10-20
					Final exam Total	40-60 60-100
						nowledge is descriptive: passed/
					failed the exa	
19.	Criteria for obtaining a signature and taking the final exam			otaii ed. nter ed.	the exam, seminar wor	ence at theoretical lessons are rk (writing text and presenting) is mmarizing the points of certain
20.	Langu	age of the course	Engli	sh		
21.		d for evaluation of		•		on of the subject, teachers and
		ality of education	collaborators involved in the educational activities			lucational activities
22.	Literat	1				
	22.1	Mandatory textbook	KS			

		Author	Title	Publisher	Year
	1	Soljakova M and others.	Pain in Anesthesiology and reanimation	Literature for students at Medical Faculty	
	2	Authorized literature of the members at the		Department of Anesthesiology, reanimation and Intensive care	
Subject		ALI FRCIC	Larry DISEASES OF THE U	 	PV

Subject	ALLERGIC DISEASES OF THE UPPER RESPIRATORY TRACT
Study program	General medicine
Code	MEDI-42
Study year	By choice
Semester	By choice
Total no. of hours	15

Credits	1					
Type of the subject	Elective					
_ ` ` ` `						
Preconditions	None					
Conducted by	Department of Internal Medicine					
Responsible teacher	Prof. Dr. Dejan Dokic					
Address	Pulmonary Medicine & Allergology Clinic, Vodnjanska 17, Skopje Phone:+389 2 3239-030; E-mail: dejand@hotmail.com					
Key words	Medical Faculty, elective subject, allergies					
Aims of the study	<ul> <li>Understanding the allergic processes in the upper airways.</li> <li>Knowing the rate of the allergic processes in the upper airways, distribution in regions in the Republic of Macedonia; gender and age groups.</li> <li>Recognizing the signs and symptoms and diagnosing allergic rhinitis and conjunctivitis.</li> <li>Performing prick test, rhinomanometry and measuring the NO in the exhaled air of the nose.</li> <li>Performing nasal and conjunctival provocation tests.</li> <li>Being familiar with the current therapy of the allergic rhinitis and conjunctivitis.</li> </ul>					

Specific recommendations for the course	The student is obliged to participate actively in all anticipated activities, including the continual assessment of knowledge in order to					
	get a signature.		C			
	Points for the activities of the student:  Activity type Points					
	Activity type					
		Min	Max			
	Theoretical course	10	20			
	Practical course	10	20			
	Continual assessment	25	35			
	Practical exam	15	25			
	Total:	60	100			
	The assessment of knowledge	is descriptive (pa	ssed/failed the exam)			
	<ul> <li>Theoretical course</li> <li>Allergic reactions, immediate and delayed; diagnosis and treatment of the allergic diseases</li> <li>Allergic rhinitis-pathogenesis, definition and classification</li> <li>Diagnosis and assessment of rhinitis</li> <li>Therapy for rhinoconjunctivitis</li> <li>Allergic Sinusitis</li> <li>Allergic Conjunctivitis</li> <li>Practical course</li> <li>Continual assessment: performing and interpretation of the allergic diseases results</li> <li>Rhinomanometry: practical application, indications, performing and interpretation of the results</li> <li>Use of the rhinomanometry in the evaluation of nasal allergy</li> <li>Conjunctival provocation test, clinical application and interpretation of the results</li> <li>NO- nitrogen monoxide clinical applications and</li> </ul>					
Organization	Theoretical course: 10 hours course: 5 hours	Practical				
Methods of studying	Lectures and discussions, prac					
Anticipated results  Knowledge and understanding: Knowledge and understanding: To achieve basic knowledge in especially of the upper airway. The lectures include introduction allergology, epidemiology, clinical presentation, diagnosis and of the allergic rhinitis and conjunctivitis.  Key skills: The student will be able to apply in practice the acquired theore knowledge.						

Textbooks	Basic
	Allergy-S. Holgate
	Essential Allergy-Mygind
	Asthma and Rhinitis-S. Holgate
	CDs and other materials in electronic form for the
	practical learning.

1.	Subject	ELECTROCARDIOGRAPHY						
2.	Code	MEDI-58	MEDI-58					
3.	Study programme	General medicine	General medicine					
4.	Institution (Unit, Institute Chair, Department)	Faculty of Medicine, St Cyril and Methodius University, Department of Internal Medicine, Clinic of cardiology						
5.	Degree of education (first or second cycle)	Integrated 6-year stu	Integrated 6-year study					
6.	Study year/semestar	4/VIII	7.	Number of EKTC credits	1			
8.	Responsible teacher	prof. Ljubica Georgi	evska	a-Ismail MD, PhD, FESC				
9.	Prerequisite	Passed exam of clinic	cal ex	kamination				

10.	The m	najor aim of the course	e (compet	tences):						
		To learn how to make	a quality	electrocardi	ogram					
		To recognize essentia	l disorde	rs in conducti	on of impulses					
		To recognize atrial or		-						
		To recognize myocar								
		To recognize electroc			of structural cardiac	disorders				
		To recognize condition								
11.	Short	contents (excerpt) of es:	the cours	e Theorethica	.1					
		Electrical system of	f conduct	ing and cardia	ac electro-physiolog	у				
	Basic principles of electrocardiography and electrocardiogram (ECG paper, measuring, heart frequency, electrical axis, source of mistakes during the making of ECG)									
	☐ Normal electrocardiogram, access to interpreting									
	□ Normal sinus rhythm and sinus rhythms									
	☐ Disorders in conducting impulses									
	□ Rhythm disorders □ Atrial									
		Junctional								
		Ventricular								
☐ Myocardial ischemia and infarction										
	Evere	Atrial and ventricul								
	Exerc	ising and interpreting	or an elec	cirocardiogra	Ш					
12.		ods of studying: rethical (interractive) t	eaching o	luring the lec	tures and exercises (	practical teach	ing)			
13.		available time:	8	<u> </u>		30 hours	- 67			
14.	Organ	nization of the course				15 hours lec	tures and exercises			
							ill take place after			
						working hou				
						consecutive	days in the week			
			·							
15.	Forms	s of teaching	15. 1	Interactive	teaching	9 hours				
	activit		15.2	Exercises		6 hours				
16.	Other	forms of activities	16.3	Home lear	ning	15 hours				
17.	Metho	ods of assessement	•	•						
	17.1.	Quizzes					12-20 points			
		Final exam-practica	1							
ļ	17.2	The student is oblig	ed to reco				30-50 points			
	1			18-30 points						
	17.3	Activity					1 =			
18.		ng criteria		L	ess than 59 points		5 (five) (F)			
18.					ess than 59 points om 60 to 68 points		5 (five) (F) 6 (six) (E)			
18.				fro	_					

			from 85 to 92 points	9 (nine) (B)		
			from 93 to 100 points	10 (ten) (A)		
19.	Requirement for signature a taking the final exam	nd	In order to obtain a signature and to enter the final exam, a student is required to attend the practical and lecture classes and to optain a minimum score  The grade for the course is formed according to the rating table, based on the sum of the points from all the activities, and the continuous checks			
20.	Language of instruction		English			
21.	Method of monitoring the quality of teaching process		Student anonymous evaluation of the subject, the teacher and collaborators participating in the teaching			
22.	Teaching aids	Ba	sic:			
			Georgievska-Ismail Ljubica i sor. I AzBuki, 2008	Elektrokardiografija. Skopje:		
			CDs and other electronic materials	for exercising		

1.	Subject	WRIST AND	HAND	SURGERY		
2.	Code	MEDI-81				
3.	Study Program	General medici	ne			
4.	Organizing Institution (Unit, Institute,	UKIM-Faculty	of Me	dicine Cathedra		
	Chair, Department)	for Surgery, Sk	opje			
5.	Educational degree (first or second					
	cycle)					
6.	Study year /semester	By choice/	15.	Number of	1	
		summer		credits		
8.	Responsible teacher	Prof. Viktor Kamiloski MD, PhD				
9.	<b>Preconditions:</b>	None				
10.	Teaching goals of the study program (co	ompetencies):				
	• Students will be able to examine a	n patient with inju	uries of	the hand and wris	t, to refer	
	him/her to different department for different analyses and to interpret the findings and					
	establish a diagnosis					
	<ul> <li>Students will be acquainted with t</li> </ul>	he most common	n proce	dures of surgical tr	eatment,	
	and will be able to refer patients v	vith wrist and ha	nd trau	ma to surgical trea	tment.	

# 11. Contents of the study program: Theoretical and practical courses:

Theoretical course: lectures / seminars

- History, historical perspectives of wrist and hand injuries, epidemiology and statistics
- Applied surgical anatomy of the wrist and hand
- Diagnosis and diagnostic procedures of wrist and hand injuries
- Operating room, surgical sepsis and anti-sepsis of wrist surgery, regional block anesthesia, Riva and local anesthetic technique
- Fractures of the distal radius, classification systems
- Fractures of the distal ulna, classification systems
- Tests for anatomical assessment of distal radius fracture
- Surgical techniques for fractures of the distal radius
- Injuries DRUJ: classification, diagnosis and treatment
- Fractures and dislocation carpus
- Surgical anatomy and kinetics of meta carpal bones and phalanges of the hand. Assessment, diagnosis and surgical treatment
- Injury to the soft tissues and tendons of the hand with reconstruction. Surgical approach and operative techniques with possible complications.
- Infections of the wrist and hand area and deep compartmental inflammation.

  Compressive neuropathy syndrome of medians, ulnaris radialis and interdigital nerves.

  Algodystrophy diagnosis and treatment
- Modern rehabilitation programs and exercises of the wrist and hand injuries

### Practical course:

- Graphic templates and cadaveric dissections of surgical approaches
- Surgical techniques for fractures of the distal radius (K-pins, external fixation, dorsal volar access, FSF fragment specific fixation)

Fractures and dislocations of carpus. Diagnosis and surgical treatment of scaphoid bone fracture. Matti - Russe surgical technique. Treatment of fractures and luxation of os lunatum (lunar and perilunar luxations). Modern surgical treatment of fractures of os capitatum, os hamatum, tirquetrum, trapezium and pisiforme.

12.	<b>Methods of studying:</b> Interactive lectures, consulting clinic and operative room practice.									
13.	Total no. of hours:		15 hours							
14.	Distribution of the available time			1 hour theoreti	cal lecture,					
				4 hours semina	ırs,					
				10 hours practi	cal teaching.	•				
15.	Type of educational	15.1	Lectures-	-theoretical	1 hours					
	activity		course							
		15.2	Practical	(laboratory,	14 hours					
		clinical),								
		seminars	, team							
			work							
16.	Other types of activities	16.1	Project assignments		hours					
	1		Individual tasks		hours					
	16.3 Ho			Home studying 20 1						
17.	Assessment of knowledge:					points				
	17.1 Tests					min max.				
			Practi	cal assessment		total 10-20 points				

		Final e	nal exam eminar work/project resentation: written and oral			Oral exam			-max. 0 points	
	17.2				ral)	al) Seminar works points			max. 0- 30	
	17.3	Active	participation			Theoretical course		min points 5-	max. ·10	
18.	criteria: with wrist interpretat			rist etati	ment of knowledge by practical examination of a patient rist and hand injury, a proposal for diagnostics, etation of the findings and proposals for further treatment ident assessment is descriptive.					
19.	signature and taking the final exam  To ol oblig To er neede The f				Conditional criteria for assessment of knowledge:  To obtain signature, active presence at theoretical lessons are obliged.  To enter the exam, seminar work (writing text and presenting) is needed.  The final mark is formed by summarizing the points of certain activities.					
20.	Langu	age of th	e course	Engli	lish					
21.			aluation of the			mous student's evaluation of the subject, teachers and				
	quality	of educ	ation	collal	bora	tors involved in the ed	ucational act	ivities		
22.	Literat	ure								
		Manda	tory textbook	cs						
			Author			Title	Publisher		Year	
	1 Jupiter J, Ring D			M	<b>I</b> anu	and wrist, AO al of fracture gement	Thieme		2005	
	22.1	2	Fernandez I Jupiter JB	ra ar	adius ppro	ures of the distal s. A practical ach to management. ad edition.	Springer, York,	New	2002	
		3	Касапинов К, Камилоо В.			ификации во иатологијата			2017	

1.	Subject	ABDOMINAL ULTRASONOGRAPHY					
2.	Code	MEDI					
3.	Study program	General medicine					
4.	Institution (Unit, Institute, Chair, Department)	Faculty of Medicine, Ss Cyril and Methodius University, Departmen of Internal Medicine, Clinic of gastroenterohepatology					
5.	Degree of education (first or second cycle)	Integrated 6-year study					
6.	Study year/semester	VII, VIII semester	7.	Број на ЕКТС кредити	1		
8.	Responsible teacher	Prof. d-r Rozalinda Popova Jovanovska					
9.	Preconditions	none					

The course program is intended for students with no experience in abdominal ultrasonography. The major aim is to learn the basics of abdominal ultrasonography including: The principles and how to perform abdominal ultrasonography. The first part is on anatomy, i.e. the recognition of the large abdominal organs and structures with emphasis on the liver, pancreas, gall bladher, biliary tree spleen, kidneys and major abdominal blood vessels. The second part will be in pathology, i.e. the most frequent hepatic, biliary tree, gall bladder and pancreatic abnormalities. Students will study on a real ultrasonography machine and complete abdominal ultrasound will be performed on patients. After the course, students will be able to recognize the abdominal organs (e.g. liver, gall bladder, kidneys, spleen), and the major abdominal vessels and liver vessels (portal vein, hepatic artery, liver veins). After the course, students will have knowledge of normal ultrasonographic findings of the abdominal organs. After the course, students will have knowledge of ultrasound findings in same pathological conditions of the abdominal organs (liver, gallbladder, bile ducts, pancreas, spleen). Theoretical course: 11. Basic principles of abdominal ultrasonography and performing ultrasound examination. Indications for ultrasonographic examination. Ultrasonographic findings of the liver, gallbladder, biliary tree and pancreas. Ultrasonographic findings of diffuse and focal liver diseases, gallbladder, bile ducts and pancreas abnormalities. Clinical Practice: Performing ultrasonographic examination. Interpretation of ultrasonographic findings in healthy subjects. Interpretation of ultrasonographic findings in pathological conditions / diseases of the liver, gallbladder, biliary tract, pancreas, spleen, large vessels. 12. Methods of studying: Participation in theoretical lectures and discussion Participation in the daily work of the Departments of Ultrasound at the Clinic of Gastroenterohepatology and ultrasound examination of the patients 13. Total available time: 15 classes 14. Organization of the course 15 classes – hours of exercise Teaching will take place during daily practice under mentor's supervision Lectures - theoretical course 15. Forms of teaching activities 15.1. 3 classes 15.2. Practical course, 12 classes Seminars Team building 16. Other forms of activities 16.1. Practice 12 classes 16.2. Individual tasks 16.3. Individual (home) learning

17.

Method of assessment

	17.1.	Practice	50 - 80 points			
	17.2.	Attendance	5 - 10 points			
	17.3.	Activity	5 - 10 points			
18.	Gradin	g criteria	Less than 59 points	5 (five) (F)		
	(points / grade)		from 60 to 68 points	6 (six) (E)		
			from 69 to 76 points	7 (seven) (D)		
			from 77 to 84 points	8 (eight) (C)		
			from 85 to 92 points	9 (nine) (B)		
			from 93 to 100 points	10 (ten) (A)		
19.	_	ement for signature and the final exam	Conditional criteria: In order to obtain a signature and to enter the final exam, a student is required to attend the practical and lecture classes and to win a minimum score The grade for the course is formed according to the rating table, based on the sum of the points from all the activities, and the continuous checks			
20.	Langua	age of instruction	English			
21.		d of monitoring the quality of ng process	Student anonymous evaluation of the subject, the teacher and collaborators participating in the teaching			