1.	Subject	**PATHOPHYSIOLOGY 1**		
2.	Code	OM 223		
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	Second (II) / Fourth (IV)	7.Number of credits	7
8.	**Responsible teacher**	Prof. Daniela Pop Gjorcheva,PhD, MD		
9.	Preconditions	Signature of 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			

<table>
<tr><td>11.</td><td colspan="4">Brief content:

Theoretical course:
• health, desease, death; ethiology and pathogenesis, compensation, decompensation, sufficiency, insufficiency
• pathogenic influence of the enviromental (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</td></tr>
<tr><td>12.</td><td colspan="4">Methods of studying:
Classic - Ex cathedra teaching and interactive teaching during lectures and practical trainings, independent study by using textbooks, computer assisted learning</td></tr>
<tr><td>13.</td><td colspan="2">Total available time:</td><td colspan="2">210 classes</td></tr>
<tr><td>14.</td><td colspan="2">Organization of the course</td><td colspan="2">105 classes - theoretical course, practical course, seminars
105 classes - home individual learning</td></tr>
<tr><td rowspan="2">15.</td><td rowspan="2">Forms of teaching activities</td><td>15.1.</td><td>Theoretical course</td><td>45 classes</td></tr>
<tr><td>15.2.</td><td>Practical course,
Seminars</td><td>60 classes</td></tr>
<tr><td rowspan="3">16.</td><td rowspan="3">Other forms of activities</td><td>16.1.</td><td>Practice</td><td></td></tr>
<tr><td>16.2.</td><td>Individual tasks</td><td></td></tr>
<tr><td>16.3.</td><td>Individual (home) learning</td><td>105 classes</td></tr>
</table>

17.	Method of assessment		
	17.1	Tests	min – max **Continual assessment – 2 tests (written form)** 1. Health, desease, death; ethiology, pathogenesis, compensation, decompensation, sufficiency, insufficiency. Pathogenic influence of the enviromental (external) factors; General reactivity and immunity; Disturbances in the course of pathological conditions with general functional disorders 18 - 30 points 2. Disturbances of metabolism and peripheral circulation 18 - 30 points **Final exam: final test + oral examination** 1. Final test: analysis of experimental models or tests for disorders detection 6 - 10 points

			2. Oral exam: theoretical discution for the application of experimental models or tests 6 - 10 points **Complete exam -** combination of the failled exam (written form) plus final test and final oral exam **Full exam -** combination of the two failled exams plus final test and final oral exaam
	17.2	Seminar paper/project (oral/written presentation)	min – max / - /

<table>
<tr><td></td><td>17.3</td><td>Active participation</td><td colspan="3">Students are obliged to follow actively all recommended activities, including participation in the continuous testing of knowlidge in order to get signature

Pointing of student's activities:

<u>Theoretical course (% of presence)</u>
• min.30% 1 point
• 31-70% 2 points
• 71-100% 3- points
<u>Practical</u> 11 - 15 points

The grade in the final exam is given accrding to the grading table, and on basis of the sum of points obtained in all of the activities</td></tr>
<tr><td>18.</td><td colspan="3">Grading criteria
(points / grade)</td><td>up to 59 points</td><td>5 (five) F</td></tr>
<tr><td></td><td colspan="3"></td><td>from 60 to 68 points</td><td>6 (six) E</td></tr>
<tr><td></td><td colspan="3"></td><td>from 69 to 76 points</td><td>7 (seven) D</td></tr>
<tr><td></td><td colspan="3"></td><td>from 77 to 84 points</td><td>8 (eight) C</td></tr>
<tr><td></td><td colspan="3"></td><td>from 85 to 92 points</td><td>9 (nine) B</td></tr>
<tr><td></td><td colspan="3"></td><td>from 93 to 100 points</td><td>10 (ten) A</td></tr>
<tr><td>19.</td><td colspan="3">Requirement for signature

and taking the final exam</td><td colspan="2">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 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.</td></tr>
<tr><td>20.</td><td colspan="3">Language of instruction</td><td colspan="2">Macedonian</td></tr>
<tr><td>21.</td><td colspan="3">Method of monitoring the quality of teaching process</td><td colspan="2">Attendance of students to classes and interactive participation in theoretical and practical lessons.</td></tr>
<tr><td>22.</td><td colspan="5">Textbooks</td></tr>
<tr><td></td><td>22.1.</td><td colspan="4">Mandatory</td></tr>
</table>

		1.	Vaskova O, Miceva Ristevska S, Pop Gjorceva D, Miladinova D, Loparska S, Majstorov V:	General pathological physiology	RC Copy, Medical faculty, Skopje	2013
			Vaskova O, Miceva Ristevska S, Pop Gjorceva D, Miladinova D, Loparska S:	Practical course for general and special pathological physiology	Boro Grafika, Skopje	2013
	22.2.	Additional				

		1.	Gamulin S et all:	Pathophysiology	Jumena Zagreb	2014
		2.	Tadzer I et all:.	General pathological physiology	Medicinska knjiga, Beograd	1984
		3.	McPhee SJ, Ganong WF:	Pathophysiology of disease. An introduction to clinical medicine	Langee medical Books/McGraw-Hill, New York	2003