

1.	Subject	BASICS OF SCIENTIFIC RESEARCH			
2.	Code	MLD – 323			
3.	Study program:	Three-year professional studies of medical laboratory diagnostics			
4.	Conducted by	UKIM – Medical faculty			
5.	Degree of education (first or second cycle)	First cycle			
6.	Academic year/semester	III/VI	7.	Credits	5
8.	Professor	Head: Prof. d-r Ljubiva Georgievska – Ismail Theoretical lessons: Prof. d-r Ljubica Georgieva – Ismail Prof. d-r Biljana Janevska Prof. d-r Katerina Tosheska – Trajkovska Prof. d-r Marija Vavlukis Practical lessons: Prof. d-r Marija Vavlukis Prof. d-r Katerina Tosheska – Trajkovska Prof. d-r Lidija Poposka Prof. d-r Irena Aleksievska - Papestiev Doc. D-r Zanina Perevska Ass. D-r Valentina Andova			
9.	Prerequisite	Enrolled in third year			
10.	Goals	Getting acquainted with: <ul style="list-style-type: none"> • Basics and importance of scientific research and the scientific method principles • Elements of the research process and understanding them • Medicine based on evidence and its use • Finding scientific research project sources and gaining elementary knowledge about approaching them critically • Elementary principles of research ethics, team work and importance of authorship • Basic procedures and rules of preparation, publishing and/or presenting the result of a scientific research 			
11.	Content summary:	Theoretical lessons (10 lessons): <ul style="list-style-type: none"> • Introduction to the subject, commitments, expectations; Science and scientific method – what is it, history, importance and principles • Terminology in science, types of evidence, recommendation strength • Design of the scientific research project • Using biomedical data bases • Ethics in scientific research work and responsible behavior in science • Structure of the scientific project and publication preparation, style, language and presentation • Critical assessment of parts of a scientific project Practical lessons (18 lessons): <ul style="list-style-type: none"> - Practical lesson 1: How to choose a topic for scientific research and searching the web sources with key words, forming a hypothesis 			

	<ul style="list-style-type: none"> - Practical lesson 2: Planning and organizing the scientific research – practice on a given subject with special attention paid on materials and methods - Practical lesson 3: Ethics in science – panel discussion on given topics (plagiarism, conflict of interest, authors’ rights protection) - Practical lesson 4: Parts of the paper: Critical approach towards part of the paper (title, design, material and methods, results, discussion, conclusion) - Practical lesson 5: Literature citation, presentation of a paper on a given material 			
12.	Teaching methods: Interactive theoretical lessons, practical lessons, panel discussions			
13.	Total classes:	100		
14.	Organization			
15.	Types of teaching activities	15.1	Lessons: theoretical classes	10 (+2 lessons exams)
		15.2	Practical lessons, seminars	18
16.	Other types of activities	16.1	Practice	70
		16.2		
		16.3	Learning at home	
17.	Knowledge assessment		Points	
	17.1	Mid-term exams	Mini-quizzes after the practical lessons – 5 in total (for every correct answer 1.5 points) Min.-max. 23 – 38	
	17.2	Final exam	Written min. – max. 27 - 45 (30 questions: every correct answer is 1.5 points, min. 60% correct answers)	
	17.3	Paper/ project - oral presentation	There are bonus points for the preparation of a project/public presentation for the ones who registered in the beginning of the lessons (5 points)	
	17.4	Active participation	Theoretical lessons points 4 – 6 min.-max. Practical lessons points 4 – 6 min.-max. Attendance to a minimum of 70% of the lessons = 4 Attendance to a minimum of 80% of the lessons = 5 Attendance to a minimum of more than 90% of the lessons = 6	
18.	Grading criterion (points/grades)	Up to 59	5 (five) F	
		60-68	6 (six) E	
		69-76	7 (seven) D	
		77-84	8 (eight) C	
		85-92	9 (nine) B	
		93-100	10 (ten) A	
19.	Requirements for obtaining a signature and attending the final	To obtain a signature, the student must gain minimum points from attending the theoretical lessons and practical lessons. The final grade is formed according to the grading criterion, and is based on the sum of the points of all the activities and exams.		

	examination		
20.	Language	Macedonian/English when necessary	
21.	Method of evaluating the quality of the lessons	Students' anonymous evaluation of the professors and lessons.	
22.	Literature:		
	22.1	Mandatory literature	
		1.	Authorized lectures from the professors (textbook in preparation)
	22.2	Additional literature	
		1.	Pansova V., Science as a Trade, Faculty of Philosophy, UKIM, 2003
		2.	Marushikj M. and coll. Scientific Research – to Write It and Publish It, Skopje, Institute of Immunobiology and Human Genetics, 2002