

<b>Subject Study Programme Code</b>	<b>BASICS OF SCIENTIFIC RESEARCH</b> Three-year specialized studies for qualified medical nurses and technicians SMST 327
<b>Study year</b>	Third
<b>Semester</b>	Sixth
<b>Total classes</b>	100
<b>Credits</b>	4.5
<b>Type of subject</b>	Obligatory
<b>Preconditions</b>	Meet the criterion to enroll the third year
<b>Operated by</b>	Chair of Internal medicine
<b>Professor in charge</b>	Prof. D-r Olivera Stojceva-Taneva - University Clinic of Nephrology
<b>Other teaching staff</b>	Prof. D-r Sunica Petrovska – Institute for Physiology Prof. d-r Elena Trajkovska Dokic – Institute for Microbiology Prof. d-r Ljubica Georgievska Ismail – University Clinic for cardiology
<b>Address:</b>	Chair of internal medicine, Vodnjanska 17, Skopje, tel.: +389 2 31 47 277; +389 2 3103 713; <a href="mailto:ostojceva@yahoo.com">e-mail:ostojceva@yahoo.com</a>
<b>Key words</b>	Studies for medical nurses and technicians, social subjects, basics of scientific work
<b>Learning objectives</b>	<ol style="list-style-type: none"> <li>1. Students will perceive basic principles of scientific method and processes of performing research in biomedicine</li> <li>2. Students will develop critical thinking about data-resources</li> <li>3. Students will acquire basic principles of scientific research ethics, team work and the importance of authorship</li> <li>4. Students will perceive the basic principles of the Evidence Based Medicine and its application</li> <li>5. Students will acquire rules and knowledge to be able to prepare a successful presentation of a scientific paper as a poster or power-point</li> </ol>
<b>Short contents</b>	<p><b>Theory (10 classes):</b></p> <ol style="list-style-type: none"> <li>1. General concept of science, scientific perspective of the world, scientific method</li> <li>2. Ethics in scientific research</li> <li>3. Planning a research – creating own bibliographic database - Conducting research (stages of scientific method) – Experimental method</li> <li>4. Writing a scientific paper: components of a research paper</li> <li>5. Quality of scientific writing, presentation of scientific research</li> <li>6. Evidence based medicine</li> <li>7. Biomedical databases, literature citing</li> </ol> <p><b>Practice (9 classes)</b></p> <ol style="list-style-type: none"> <li>1. Responsible conduct and ethics in scientific research: Case analysis and discussion (working in small groups)</li> <li>2. Explaining the principles of elaborating a diploma work (seminar topic), making an outline and defining tasks and deadlines for the seminar work</li> <li>3. Model of a diploma work by critical analysis of a published scientific paper - Working in small groups</li> <li>4. Writing an abstract out of the elaborated published paper, individual effort of each student</li> <li>5. Preparing a power-point presentation of the elaborated paper that has been analyzed previously</li> <li>6. Explaining the principles of preparing a diploma work (seminar topic), review and allocation of tasks and deadlines for the seminar work</li> </ol> <p><b>Seminar (30 classes):</b></p>

	<ol style="list-style-type: none"> <li>Developing skills to create a plan, design and execute a research project</li> <li>Creating a seminar topic – a version of the diploma work</li> </ol>		
<b>Organization</b>	<b>Theory:</b> 10 classes <b>Practice:</b> 9 classes <b>Seminars:</b> 30 classes		
	<b>Preparing a diploma work under mentorship:</b> 60 classes		
<b>Learning methods</b>	Interactive teaching, practice and seminars		
<b>Anticipated learning results</b>	<ol style="list-style-type: none"> <li><b>Knowledge and understanding:</b> the student will acquire basic knowledge to conduct a scientific research in the field of biomedicine.</li> <li><b>Essential skills:</b> The student will be competent to make a plan, design and conduct a research project for preparing a diploma work</li> </ol>		
<b>Specific teaching recommendations</b>	The student is obliged to actively follow all the anticipated activities in order to be endorsed		
	<b>Scoring student' activities:</b>		
	Type of activity	Score	
		Min	Max
	Teaching*	6	10
	Practice presence	6	9
	Practice - activity	7	12
	Continuous verification – MCQ test	18	30
	Continuous verification – writing an abstract	12	22
	Seminar work	9	15
Prsentation	2	2 (+4)	
	<b>60</b>	<b>100 (+4)</b>	
<b>Verification of knowledge</b>	Conditional criteria: <ol style="list-style-type: none"> <li>The student is required to have a minimum score in teaching and practice and seminars in order to be able to approach the MCQ test and perform a seminar work</li> </ol> <p>The final score is calculated according to the table, and on the basis of a sum of scores of all the activities, including the score of the seminar work</p>		
<b>Literature</b>	<b>Basic:</b> <ol style="list-style-type: none"> <li>Зафировска К, Георгиевска-Исмаил Љ . Авторизирани предавања</li> <li>Марушиќ и сор. Увод у знанствени рад у медицини. Медицинска наклада:Загреб, 2004.</li> <li>Силобрчиќ В. Како саставити, објавити и оцјенити знанствено дело. Медицинска наклада: Загреб, 2003.</li> <li>International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals: writing and editing for biomedical publication. Updated april 2011. (<a href="http://www.icmje.org">http://www.icmje.org</a> пристапено - октомври 2011).</li> <li>Спироски М Ж .Научниот труд - Д а се напише и да се објави. Институт за имунобиологија и хумана генетика: Скопје, 2002</li> <li>Панзова В. Наука како занает. Ф илозофски факултет: Скопје, 2003</li> </ol>		

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