

**MED5019– Scientific-Research Skills**

Course title	Code	Semester	Type of course	Course structure and volume (hours)			ECTS
Scientific-Research Skills	MED5019	IV	Mandatory	Lecture	10	90	3
				Seminar	27		
				Midterm Exam	1		
				Final Exam	2		
				Indep. Work	50		
Faculty, the educational program and level of education	School of Medicine and Health Sciences One cycle (5-years duration) Higher Educational program “Dentistry”						
Staff	Vakhtang Tebidze- MD, Invited Teacher Tel: 577 780 126 E-mail: <a href="mailto:vakhtang.tebidze@bauinternational.edu.ge">vakhtang.tebidze@bauinternational.edu.ge</a> Irina Nakashidze, PhD, Invited Techer Cell phone: +995 59372367 E-mail: <a href="mailto:Irina.nakashidze@bauinternational.edu.ge">Irina.nakashidze@bauinternational.edu.ge</a>						
Duration	2 weeks						
Prerequisite	No prerequisites						
Aim	The aim of this course are demonstrate a secure knowledge and understanding of the big ideas and concepts of the sciences, develop skills for learning, life and work, skills of scientific inquiry and investigation using practical techniques. skills in the accurate use of scientific language, formulae and equations. Understand the role of creativity and inventiveness in the development of the sciences; apply safety measures and take necessary actions to control risk and hazards and recognise the impact the sciences make on their lives, the lives of others, the environment and on Society.						
Methods of Teaching/Learning	Lecture, journal Club						
Assessment System and Criteria	<b>Attendance - student is obliged to attend 70% of the total number of the learning course</b> The knowledge of the student is evaluated by 100 point-based evaluation system out of which 40 points are allocated for the current assessment, 20 for each midterm exam and 40 points for the final exam. <b>1. Current Assessment (activity) - 40 points, including the following:</b> <ul style="list-style-type: none"><li>● Presentation- 10</li><li>● Journal Club- 6X5=30</li></ul> <b>Presentation assessment criteria (10 points)</b> <ul style="list-style-type: none"><li>● Problem novelty - 2 points;</li><li>● Academic level - 2 points;</li><li>● Review of the available modern material related to the topic -2 points;</li><li>● Visual and technical quality of the material - 2 points;</li><li>● Culture of arguing and listening - 1 point;</li><li>● Correct language and style - 1 point;</li></ul>						

**Presentation assessment criteria for journal club (5 points):**

There should be six journal club presentations. core up to 5 points will be calculated considering following criteria:.

1. Critical analysis of the published literature - 1 point;
2. Making conclusion and using them in practice - 1 point;
3. Review of the available modern material related to the topic - 1 point;
4. Presentation and ability to discuss and answer questions- 1 point;
5. Demonstrations of knowledge of research methods - 1 points:

**2. Midterm Exam - 20 points;**

The exam is conducted in a test-based form (Multiple Choice Questions - MCQ). The test includes 50 questions and the value of each is 0.4 point(s) . The highest possible score is 20.

**3. Final Exam - 40 points**

Final Exam is conducted in a combined way:

- Test-based form (MCQ -50 tests with 0.4 point(s) for each question. - 20 points
- Project-20 points

**Final Exam Project (review paper/research paper /case report) assessment criteria (20 points)**

The criteria of paper (review/research/case report) assessment (According to 5 primary criteria. Each criterion will assess a maximum of four scores; Total – 20 points): Important: Before revising the research paper, it will be checked for pragmatism. If any percentage of pragmatism exists, the scientific paper will be rejected for revision. **The scientific paper must be sent for final submission on the exam date.**

***The criteria for evaluating a scientific paper are:***

1. The novelty of the Research topic, research purpose and objectives, the formulation of the research problem/research questions– 4 points
2. Relevance of the Research Methodology of the study problem- 4 points
3. The interpretation of the results/main findings, relevance discussion and conclusions – 4 points
4. The citation usage of the Reference Management Software and including suitable reference-4 points
5. The Structure of the scientific paper, Writing grammatically and scientifically, and usage of standard English- 4points

Fully compliant 4 points

Partially compliant 1-3.5 ponts

Uncompliant 0 point

**Prerequisite for Final Exam are:**

- Prerequisite for Final Exam is the situation when at least 60 % of the current assessment level is achieved.
- 70% of the course should be attended.

	<p>The exam is considered being passed by the student if he /she receives <b>60% or more</b> out of the highest evaluation for the exam (<math>40 \times 60 / 100 = 24</math> points). When the total evaluation of the student (current evaluation + midterm exams' evaluations + final exam evaluation) is more that 40 but less than 51 points, even though the exam grade threshold is passed, the learning course is considered not being covered and the student is given the right to exam retake during the additional examination period.</p> <p>If the final evaluation for the Learning Course, after taking the additional exam, (current evaluation + midterm exams evaluation + final exam evaluation) is less than 51%, the learning course is not considered covered and it must be taken again.</p> <p>In summary, the student is awarded the credit in case he/she accumulates minimum 51% out of 100%.</p> <p><b>Positive scores:</b></p> <ul style="list-style-type: none"> <li>• (A) Excellent- 91 or more points;</li> <li>• (B) Very Good- 81-90 points;</li> <li>• (C) Good- 71-80 points;</li> <li>• (D) Satisfactory- 61-70 points;</li> <li>• (E) Enough- 51-60 points;</li> </ul> <p><b>Negative scores:</b></p> <ul style="list-style-type: none"> <li>• (FX) Failure - 41-50 points: the student needs more independent work and is granted a single attempt of exam retake;</li> <li>• (F) Fail - 40 points or less: the student's conducted work is not sufficient and needs to take the course again.</li> </ul> <p>After the results of final exams are available, students with FX assessment have a right to retake an exam during an additional exam week in the same semester.</p> <p>An interval between a final and a corresponding additional exam must be at least 5 days after the results of a final exam become available</p> <p style="text-align: center;"><b>Criteria for assessing quizzes (10 points)</b></p> <p><b>Quiz</b> –Multiple-choice questions. One correct answer is assessed with 0,4 points. Professors themselves determine the quantity of quizzes for each course.</p>
<b>The core literature</b>	<ol style="list-style-type: none"> <li>1. <b>Basic Biomedical Research and scientific skills, Tbilisi State Medical University, Tbilisi, Georgia, 2024</b></li> <li>2. PetterLaake, Haakon BreienBenestad, BjørnReino Olsen. Research in the /Medical and biological sciences. Elsevier, 2015;</li> <li>3. <a href="https://www.graphpad.com/">https://www.graphpad.com/</a></li> </ol>
<b>The auxiliary literature</b>	

**Learning Outcomes**

NQF*	COURSE LEARNING OUTCOMES	PROG. LO	LECTURE	SEMINAR	TEACHING IN SIMULATION ENVIRONMENT	TEACHING IN CLINICAL ENVIRONMENT	MIDTERM EX.	FINAL EXAM	ASSES. METH.
KNOWLEDGE AND AWARENESS	<ul style="list-style-type: none"> <li>Knows and formulate hypotheses to guide experimentation and data collection.</li> <li>Defineshow to synthesize valid conclusions from qualitative data</li> <li>Knows how to write proposal</li> <li>ComprehendsScientific ethic principles</li> <li></li> </ul>	1.2 11.2	X	X			X	X	<ul style="list-style-type: none"> <li>MCQ</li> </ul> Presentation
SKILL	<ul style="list-style-type: none"> <li>analyzes published research.</li> <li>develops and implements investigative designs.</li> <li>collects, organizes, and evaluates qualitative and quantitative data obtained through experimentation.</li> <li>Organises laboratory notebook</li> <li>Maintains safe laboratory work habits.</li> <li>Communicates effectively, in verbal or written form, using proper scientific terminology</li> </ul>	2.2 6,1 11.1 11.2		X				X	Journal club  Project  Presentation
RESPONSIBILITY AND AUTONOMY	<p>Acts in accordance with ethical principles in conducting scientific research, takes into account the values of academic integrity</p> <p>Has the ability to work independently</p>	2.2. 11.4.						X	Project

**Learning Course Content**

<b>№</b>	<b>Topics</b>	<b>Lecture (hs)</b>	<b>Seminar</b>
I	Beginning a STEM Research Project	1	
II	Research Design	1	2
III	Background Research and Note Taking	1	2
IV	Writing Hypotheses; Proposal Writing	1	3
V-VI	Scientific ethic	1	3
VII-VIII	<b>Midterm exam</b>		1
IX	Organizing a Laboratory Notebook. Safety measures and take necessary actions to control risk and hazards.	1	3
X	Descriptive Statistics	1	4
XI-XII	Graphical Representations	1	4
XIII-XIV	Inferential Statistics and Data Interpretation	1	4
XV	Documentation and Research Paper Setup	1	2
XVII-XXII	<b>Final Exam</b>		2