

Course Title	<b>Medical Biochemistry I</b>				
Course Code	MD100				
Course Type	Compulsory				
Level	1 <sup>st</sup> Cycle (MD)				
Year / Semester	1 <sup>st</sup> Year / 1 <sup>st</sup> Semester				
Teacher's Name	TBA				
ECTS	6	Lectures / week	3 Hrs / 14 weeks	Laboratories / week	4 Hrs / 14 weeks
Course Purpose and Objectives	<p>The objective of the course is to discuss the principal biochemical and metabolic processes in the body, their pathways and the role of the cell membrane and the different enzymes.</p> <p>The process of intra- and inter- cellular communication</p>				
Learning Outcomes	<p>Upon successful completion of this course students should be able to:</p> <ul style="list-style-type: none"> <li>• Identify the principal classes of biomolecules and explain their function or activity with regard to their chemical structure.</li> <li>• Explain the interactions of simple biomolecules giving rise to complex supramacromolecular structures.</li> <li>• Describe the structure and properties of water and to understand its macromolecular structure, its properties and biological functions.</li> <li>• Discuss the general principles of enzymology and the importance of enzymes as essential instruments in cellular metabolism.</li> <li>• Discuss the biosynthetic pathways and metabolism of amino acids, fatty acids and protein synthesis.</li> <li>• Describe the role of biological membranes in the processes which generate and use biological energy and also maintain the compartmentalization of the vital processes.</li> <li>• Explain the molecular basis of the signal transduction pathways.</li> <li>• Discuss and explain the degradation of Fatty acids, Pentose phosphate pathway, Electron Transport.</li> </ul>				
Prerequisites	None		Co-requisites	None	
Course Content	<p>Biomolecules and the interactions of simple biomolecules giving rise to complex supramacromolecular structures</p> <p>Phosphoglyconic acid pathway and pentose phosphate</p>				

	<p>Structure and properties of water, its macromolecular structure, its properties and biological functions.</p> <p>Enzymology and the roles of enzymes as essential instruments</p> <ul style="list-style-type: none"> <li>○ in cellular metabolism,</li> <li>○ in the principal metabolic strategies to obtain and use energy</li> </ul> <p>Bioenergetic balances.</p> <p>Biological membranes and the processes which generate and use biological energy</p> <ul style="list-style-type: none"> <li>• Molecular basis of the signal transduction pathways.</li> </ul> <p>Introduction of writing a scientific report.</p> <ul style="list-style-type: none"> <li>• Introduction of Poster presentation.</li> <li>• Introduction of Oral presentation</li> </ul>
Teaching Methodology	Face-to-face
Bibliography	<p>Textbook of Biochemistry with Clinical Correlations; Devlin, Thomas M.; 978-0470281734; John Wiley;</p> <p><u>Biochemistry: International Edition</u>; Berg, J.M. / Tymoczko, J.L.; 7th; 978-1429276351; W. H. Freeman;</p> <p>Study Guide for Chemistry: An Introduction to General, Organic, and Biological Chemistry; Karen C. Timberlake; 11; 978-0697250032; Prentice Hall;</p> <p>Clinical Biochemistry: Metabolic and Clinical Aspects; Marshall William William 978-0443101861; Churchill Livingstone; Lehninger Principles of Biochemistry; David L. Nelson; 978-1429208925; W. H. Freeman;</p>
Assessment	<p>Examinations: 70%</p> <p>Assignment/Lab 20%</p> <p>Class Participation: 10%</p>
Language	English