Course Title	Medical Biochemistry				
Course Code	DES120				
Course Type	Compulsory				
Level	Bachelor of Dentistry				
Year / Semester	1st year / 1st semester				
Teacher's Name	TBA				
ECTS	6	Lectures / week	3 hrs / 13 weeks + exam week	Laboratories / week	3 hrs / 13 weeks
Course Purpose and Objectives	This introductory course provides students with an introduction to Biomolecules. The organization of the human body in Molecular level and all biomolecules abandoned in cells, tissues, and core biochemical pathways. Learning activities provide students with the foundational knowledge and skills required to undertake further study of body systems and to demonstrate knowledge of normal function of the human body on the, microscopic and molecular levels.				
Learning Outcomes	Upon successful completion of this course students should be able to: • Describe the structure, main characteristics, and function of the five main classes of biological macromolecules: carbohydrates, lipids, nucleic acids, vitamins and proteins. • Discuss proteins – structure, diversity of function and enzymes. • Discuss protein biosynthesis, post-translational modification, and secretion. • Discuss biological membranes – molecular structure, membrane transport, channels and transporters, control of intracellular environment, fluid compartments etc. • Discuss the structure and function of major subcellular structures and organelles. • Discuss the Cellular metabolism – major pathways for synthesis/turnover of macromolecules and energy metabolism, including carbohydrate metabolism. • Describe the principles of cell signaling and communication.				
Prerequisites	None	Co-requisites	None		

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<tr><td>Course Content</td><td>In that regard, students will familiarize themselves with the following Biochemical Modules:
Discuss the significance of water in life and the key functional groups involved in biological systems.
Discuss the five biomolecules: Proteins, carbohydrates, lipids, nucleotides, and vitamins.
Discuss the structure and function of all biomolecules.
Discuss the associated diseases appeared upon malfunction of the biomolecules.
Discuss the Cellular signaling and the different types of signal transduction.
Summarize the bones chemistry and bones reabsorption and resorption.
Discuss the principles of Human metabolism.</td></tr>
<tr><td>Teaching Methodology</td><td>Face-to-face. Lectures, Laboratories, Quizzes, Assignments, Literature review sessions.</td></tr>
<tr><td>Bibliography</td><td>Nelson DL, Cox MM. Lehninger Principles of Biochemistry. New York: W H Freeman MacMillan, 2017.

Berg JM, Tymoczko JL, Stryer L. Biochemistry. New York: W H Freeman, 2002.</td></tr>
<tr><td>Assessment</td><td><table><tr><td>Final Examination</td><td>60%</td></tr><tr><td>Lab Report / Oral presentations</td><td>30%</td></tr><tr><td>Participation and attendance</td><td>10%</td></tr><tr><td>Total</td><td>100%</td></tr></table></td></tr>
<tr><td>Language</td><td>English</td></tr>
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