

**Shri Manibhai Virani and Smt. Navalben Virani Science College, Rajkot**  
(An Autonomous College affiliated to Saurashtra University, Rajkot)

**Department of Biochemistry**  
**Bachelor of Science (Hon/Hon with Research (FYUGP))**  
**For the students admitted from A.Y. 2023-2024& onwards**  
**NCrF- Level 4.5: First Year FYUGP: Semester I & II (UG Certificate in Sciences)**

<b>Multi Disciplinary Course</b>		
Offering Department: <b>Biochemistry</b>	Offered to: <b>Other Program and Departments.</b>	
<b>Semester – I</b>		
Course Code	Course Title (MDC)	Course Credit and Hours
	<b>BIOCHEMISTRY IN HEALTH &amp; DISEASES</b>	<b>2 Credits - 2 hrs/wk</b>

**Course Description:**

Biochemistry in Health and Disease provides a clear and straightforward account of the biochemistry that is necessary to understand the physiological functions of tissues or organs essential to the life of human beings. Focusing on the dynamic aspects of biochemistry and its application to the basic functions of the body, the course bridges the gap between biochemistry and understanding of health and disease.

**Course Purpose:**

This course will introduce general biochemical concepts that will allow for an understanding of the biological and chemical principles underlying human physiology, health and disease. Students will gain an enhanced appreciation of general applications of biochemistry as applied in day-to-day healthy life and during the disease states, diagnosis and clinical management of metabolic disorders.

<b>Course Content</b>	<b>Hours</b>
<b>Unit I: Health and Wellness</b>	<b>6 hrs</b>
<ul style="list-style-type: none"> <li>• WHO definition of health,</li> <li>• Classification of diseases-Endemic, Epidemic, Pandemic;</li> </ul>	

Professional health hazards. <ul style="list-style-type: none"> <li>• Communicable and non- communicable diseases.</li> </ul>	
<b>Unit-II: Nutrition</b>	<b>6 hrs</b>
<ul style="list-style-type: none"> <li>• Nutrition and its importance.</li> <li>• Concept of balanced diet.</li> <li>• Nutritional importance of carbohydrates, fats, proteins and water.</li> <li>• Probiotic</li> </ul>	
<b>Unit- III: Food Adulteration and Toxicology</b>	<b>6 hrs</b>
<ul style="list-style-type: none"> <li>• Basic concept on Food Adulteration. Intentional and Incidental adulterants.</li> <li>• Source,entry in to biological system and</li> <li>• Toxicity of - lead, mercury, cadmium and arsenic</li> </ul>	
<b>Unit- IV: Diseased conditions</b>	<b>6 hrs</b>
<ul style="list-style-type: none"> <li>• Acute disease, chronic disease, Incurable disease, Terminal disease.</li> <li>• Allergies.</li> <li>• Concept of Addiction</li> <li>• Blood transfusion safety</li> </ul>	

### **Suggested readings**

1. Modern Nutrition in Health and Disease, 2006, 10th Edition, Maurice E. Shils, Moshe Shike, A Catharine Ross.
2. Clinical Biochemistry and Metabolic Medicine, 2012, Eighth Edition, Martin Andrew Crook, CRC Press,
3. Nutrition and Health in Developing Countries, 2000, Editors: R. Semba and M.W. Bloem, Humana Press.