# DEPARTMENT OF BIOCHEMISTRY

## MBBS - COURSE OUTCOME

## PAPER I

| Course outcome : | Students should be able to |
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| CO 1 | Understand the molecular and functional organization of cell and its sub cellular components. |
| CO 2 | Understand the enzymes, their types, enzyme activity, their diagnostic role and therapeutic uses. |
| CO 3 | Compare the biomedical importance of different classes of carbohydrates. Describe the disorders associated with digestion and absorption of carbohydrates and understand the biomedical importance of various pathways of carbohydrate metabolism and its disorders. Discuss and interpret laboratory results of analytes associated with the metabolism of carbohydrates. |
| CO 4 | Differentiate the biomedical importance of main classes of lipids. Describe the disorders associated with digestion and absorption of lipids and understand the biomedical importance of various pathways of lipid metabolism and its disorders. Discuss and interpret laboratory results of analytes associated with the metabolism of lipids. |
| CO 5 | Discuss the source, calorific value, functional importance of various dietary components and beneficial effects of dietary fibers.<br>Explain the various nutritional disorders, its causes and health risk associated with these<br>Apply the knowledge of nutrients and its calorific value in the prescription of diet in conditions like diabetes mellitus, coronary artery diseases and pregnancy. |
| CO 6 | Describe the various components of ECM, its function and associated disorders.<br>Explain the protein targeting & sorting and associated disorders. |

**PAPER II**

| **Course outcome :** | **Students should be able to** |
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| CO 1 | Understand the structural organization of proteins and apply the knowledge in the pathogenesis of disorders associated with hemoglobin.<br>Describe the common disorders associated with digestion &absorption and metabolism of proteins.<br>Discuss and interpret laboratory results of analytes associated with the metabolism of proteins. |
| CO 2 | Discuss the metabolic adaptations that occur in the fed and fasting state in the major organs.<br>Explain the common disorders associated with metabolism of nucleotides. Describe the functions, metabolism, homeostasis and disorders associated with micro nutrients. Understand the process involved in maintenance of normal PH , water & electrolyte balance in the body fluids and derangements associated with these.<br>Relate and interpret the various analytes used in the differential diagnosis of disorders of liver, kidney, thyroid and adrenal glands. |
| CO 3 | Illustrate the structure and functions of nucleic acids. Describe the process involved in the central dogma of molecular biology.<br>Describe Cell cycle , gene mutation, and regulation of gene expression .<br>Define the role of xenobiotics in diseases. Summarize the diagnostic and therapeutic applications of recombinant DNA technology and PCR |
| CO 4 | Understand initiation, promotion and activation of oncogenes in the pathogenesis of cancer and highlight on the importance of $P^{53}$ and apoptosis in cellular differentiation. Describe various tumor markers and biochemical basis of cancer therapy.<br>State the various components of immune system & types of immune responses and apply the knowledge of antigen in vaccine development |
| CO 5 | Enumerate the commonly used equipments & apparatus and mention its uses.<br>Describe the measures taken to ensure good laboratory safety practice and medical waste disposal. |
| CO 6 | Enumerate the common inborn errors of metabolism and describe the use of paper chromatography in the screening of urine for inborn errors of metabolism. |