SARDAR PATEL UNIVERSITY
Programme: MSC (Biochemistry)
Semester: IV
Syllabus with effect from: June 2011

Paper Code: PS04CBIC02	**Total Credits: 4**
Title Of Paper: Nutritional & Clinical Biochemistry	

Unit	Description in detail	Weightage (%)
1	Basic concept - composition of human body: Energy content of food. Measurements of energy expenditure. Energy requirements of man, woman and factor affecting energy requirements, Basal metabolic rate, factor affecting BMR. Carbohydrates - Dietary requirements and sources of available and unavailable carbohydrates and action of dietary fibers. Disorders of carbohydrate metabolism: Diabetes mellitus. Glucose tolerance test, Glycogen storage disease	**25 %**
2	Proteins: protein reserves of body. Nitrogen balance studies and factor affecting it. Protein quality and essential amino acids. Cereal proteins requirement at different stages of development. Disorder of AA metabolism-phenylalaniremia homocystineuria and tyrosinemia. Disorders of purine and pyrimidine metabolism. Protein energy malnutrition (PME)-Marasmus and Kwashiorkor disease. Starvation - protein metabolism in prolonged fasting, high proteins, low caloric weight reducing diets.	**25 %**
3	Lipids - major classes of dietary lipids. Properties and composition of plasma lipo - proteins. Essential fatty acid and their physiological function. Clinical inter-relationship of lipids, lipoproteins and apolipoproteins. Tests for apolipoproteins, HDL, LDL, cholesterols and Triglyceride disorder. Obesity-factor leading to obesity –environmental and genetic. Role of leptin in regulation of body mass.	**25 %**
4	Electrolytes and water balance. Food processing and loss of nutrients during processing and cooking. Anti-nutrients-naturally occurring food born toxicants, Protease inhibitors, hepatotoxins allergens, toxins from mushroom, animal and see goods.	**25 %**

Basic Text & Reference Books:

- Harper's Illustrated Biochemistry by Murray, Granner and Rodwell 27th edition McGraw Hill Food and nutrition by Swaminathan.
- Nutritional biochemistry and metabolism by Linten.
- Biochemistry with clinical correlation: Devlin.