BHARATHIAR UNIVERSITY, COIMBATORE
B.Sc. FOOD SCIENCE AND NUTRITION

Note: The revised syllabus for the Core IV - Principles of Nutrition furnished below be followed and there is no change in the existing scheme of examination and syllabi of remaining papers.

Core Paper-IV
PRINCIPLES OF NUTRITION
Hours of instruction /week: 4

Subject description:
Meaning of nutrition, basics about carbohydrates, proteins, fats, fat and water soluble vitamins, minerals and water balance.
Objectives:
To enable students
1. Understand the vital link between nutrition and health
2. Gain knowledge on functions, metabolism and effects of deficiency of nutrients

UNIT-I
Introduction to Nutrition - General introduction, history of Nutrition.
Energy - Definition of Kilocalories, Joule, energy value of foods, determination, physiological fuel values, SDA of foods,
basal metabolic rate- definition, factors influencing BMR. Recommended Dietary Allowances for energy.
Carbohydrates - Classification, functions, source, digestion, absorption and utilization, dietary fibre and health.

UNIT-II
Protein - Classification, functions, sources and requirements, digestion, absorption and utilization, Protein quality – PER, BV, NPU, digestibility coefficient, -definition and calculation
Reference protein, essential amino acids and mutual supplementation of dietary protein
Fats and Lipids - Classification, functions, sources, importance of essential fatty acids, their requirements and deficiency.

UNIT-III
Vitamins – Fat soluble vitamins –A, D, E and K- functions, source, requirements, deficiency disorders.
Water soluble vitamins –The B-complex vitamins – Thiamine, Riboflavin, Niacin, Folic acid, Biotin, Pantothenic acid and Vitamin C - functions, source, requirements and deficiency disorders.

UNIT-IV
Minerals - General functions in the body, classification- macro and micro minerals.
Micro minerals – Iron, Fluorine, Zinc, copper, Iodine - functions, requirements, deficiency and toxicity.
Macro minerals – Calcium & phosphorus - functions, requirements, deficiency and toxicity.
UNIT-V
Water Balance – Functions of water, water distribution, maintenance of water and regulation of acid-base balance in the body. Electrolyte balance

Reference Books:
2. Human Nutrition and Dietetics – Davidson S. Passmore
3. Normal and Therapeutic Nutrition- Corinne H. Robinson & Marilyn Lawler