

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:

1. Essential of food & Nutrition –Vol. 1 M. Swaminathan,Bappco,Bangalore.
2. Human Nutrition and Dietetics –Davidson S. Passmore
3. Normal and Therapeutic Nutrition- Corinne .H.Robinson & Marilyn Lawler
4. Contemporary Nutrition - Gordon M. Wardlaw, Paul Insel et, al., (2000)
Mosby,Chicago.
5. Nutrition- concepts and controversies- Eleanor Whitney –Eighth Edition (2000)
6. Basic principles of Nutrition- Seema Yadav, First edition (1997)
7. Essentials of Nutrition and Diet therapy -Sue Rodwell Williams, fifth edition,
Times Mirror Mosby College Publishing, 1990.
8. Understanding Nutrition -Whitney P.N. and Roes S.R., West Publication Co, 1996.