ST. JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

III SEMESTER   **HOME SCIENCE** TIME:3HRS/WEEK

HS-Mi-3501(3) **BASIC NUTRITION** MARKS:100

w.e.f 2024-2025 (23AK Batch) **SYLLABUS**

**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

3. Learn the foundational concepts of Ayurveda, including the significance of food in maintaining health and the roles of the three doshas (Vata, Kapha, and Pitta).

**Learning outcomes:** To enable students to learn:

1. Understand the fundamental concepts of Ayurveda and the significance of food in health, learn about energy balance and metabolic rates, and gain knowledge about carbohydrates and dietary fiber, their functions, sources, and the consequences of deficiencies.
2. Acquire a comprehensive understanding of proteins and fats, including their functions, sources, and the consequences of deficiencies. They will learn about the importance of essential amino acids and fatty acids in human nutrition.
3. Identify and understand the functions, sources, requirements, and deficiency disorders associated with both fat-soluble and water-soluble vitamins, emphasizing their role in maintaining health.
4. Knowledge of the role of minerals in the body, their classification, and the specific functions, sources, and deficiency disorders related to both macro and micro minerals.
5. Importance about the crucial functions of water in the body, understand the distribution and regulation of water, and be able to identify and explain disturbances in fluid balance such as dehydration, oedema, and water toxicity.

**UNIT- I: -10 hours**

1. Ayurvedic- Definition, significance of food in maintenance of health. Ayurveda doshas-Vata, Kapha and Pitta, types of food-Tamasic, rajasic, Sattvic.
2. Energy **-** Definition of Kilocalories, Joule, energy value of foods. Basal metabolic rate- definition, factors influencing BMR. Recommended Dietary Allowances for energy. Energy imbalance: undernutrition and obesity.
3. Carbohydrates – Classification**,** functions, source, requirement, utilization, deficiencies, Sources Role of dietary fiber in human nutrition.

**UNIT- II: -10 hours**

1. Protein - Functions, sources and requirements, utilization, deficiency-PEM, Essential amino acids, their importance.
2. Fats and Lipids – Classification, functions, sources, requirements, importance of essential fatty acids, their requirements and deficiency.

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**UNIT-III: 10 hours**

1. Vitamins – Fat soluble vitamins –A, D, E and K- functions, source, requirements, deficiency disorders.
2. Vitamins – Water soluble vitamins –The B-complex vitamins – Thiamine, Riboflavin, Niacin, Folic acid, Biotin, Pantothenic acid, B12 and Vitamin C - functions, source, requirements and deficiency disorders.

**UNIT-IV: 10 hours**

1. Minerals - General functions in the body, classification- macro and micro minerals. Micro minerals – Iron, Fluorine, Zinc, copper, Iodine -functions, source, requirements and deficiency disorders.
2. Macro minerals – Calcium, sodium, potassium & phosphorus -functions, source, requirements and deficiency disorders.

**UNIT-V: 10 hours**

1. Water Balance – Functions of water, water distribution, maintenance of water and regulation of acid-base balance in the body
2. Disturbances in fluid balance – Dehydration, oedema and water toxicity

**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)

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