

**5<sup>th</sup> SEMESTER**  
**DISCIPLINE SPECIFIC ELECTIVE (DSE)**

**NAD519D1: NUTRITION AND DIETETICS: NUTRITIONAL BIOCHEMISTRY**

(CREDITS: THEORY-4, PRACTICAL-2)

**THEORY (4 CREDITS)**

**Unit 1 Introduction to Biochemistry**

- Definition, objectives, scope and inter-relationship between biochemistry and other Biological sciences •

Definitions, classification, structure and general properties of:

1. Monosaccharide's-glucose, fructose, galactose, ribose
2. Disaccharides - maltose, lactose, sucrose
3. Polysaccharides - dextrin, starch, glycogen

**Unit 2 Lipids**

- Definitions and classification of lipids • Composition and properties of fats • Rancidity and oxidation of fats
- Essential and Non-essential fatty acids

**Proteins**

- Definition, classification, structure of amino acids • Essential and non-essential amino acids
- Elementary information about primary, secondary and tertiary structure of proteins

**Nutrient Transport**

- Definition, classification • Factors affecting enzyme activity • Introduction to co-enzymes
- Transport of nutrients across the cell membrane:
  1. Active transport
  2. Passive transport
  3. Facilitative diffusion

**Unit 4 Vitamins**

Classification and biochemical role of

1. Fat soluble vitamins - A and D.
2. Water soluble vitamins - B1, B2, niacin, pyridoxine, folic acid, B12 and C

**Minerals**

- Biological role and occurrence of inorganic elements - iron, calcium, phosphorous, Iodine, selenium and zinc

**PRACTICAL (2 CREDITS)**

1. Titration estimation of Ascorbic Acid
2. Qualitative analysis of
  - Monosaccharides
  - Disaccharides and
  - Polysaccharides
3. Qualitative analysis of proteins
4. Determination of free fatty acids in oil sample

**RECOMMENDED READINGS**

- Hawk PB, Oser BL and Summerson WH (1954). *Practical Physiological Chemistry*, Mcgraw Hill, New York •
- Sundararaj P and Siddhu A (2006). *Qualitative Tests and Quantitative Procedures in Biochemistry*, Elite Publishing House Pvt. Ltd., New Delhi
- Lehninger A L, Nelson D L and Cox M M (2009). *Principles of Biochemistry*, 6th Ed. CBS Publishers and Distributors
- Murray R.K, Granner D K, Mayes P A and Rodwell V W (2009). *Harper's Biochemistry*, 28<sup>th</sup> Ed, Lange Medical Book.

**5<sup>TH</sup> SEMESTER**  
**DISCIPLINE SPECIFIC ELECTIVE (DSE)**

**NAD516D2: NUTRITION AND DIETETICS - INSTITUTIONAL MANAGEMENT**

(CREDITS: THEORY-4, PRACTICAL-2)

**Objectives:**

- To acquaint students with knowledge of food service management and its establishment.
- To provide students with knowledge of quantity and quality food production.
- To give students information about safeguards in food production.

**Contents**

**Unit-I Food service systems and their development**

- Types of Food Service System
- Commercial and Noncommercial
- Approaches to the Food Service Management Principles, Functions
- Tools of Management

**UNIT II Layout and Design**

- Definition of layout and design,
- Factors affecting layout and design,
- Determining Work Centers,
- Principles of Kitchen layout
- Work flow, Work simplification

**UNIT III Equipments**

- Classification of equipments
- Factors affecting selection of equipments,
- Purchase and installation,
- General care and Maintenance of equipment,
- Cleaning systems

**UNIT IV Purchasing Receiving and Storage**

- Purchasing Activity, Methods of Buying & Receiving
- Methods of Delivery, Delivery Procedure and Revising Procedure
- Types of Storage, Storekeeping and Store Record
- Maintenance of Food Quality in Storage
- Approaches to Entrepreneurship Development

## **Practicals:**

### 1. Weights and measures:

- Common measures used for foods.
- Common abbreviations, equivalents and conversion factors.
- Approximate weight of food types according to standard measuring cups and/or size or number.
- Volume measures equivalents.

### 2. Cost Analysis of Processed Foods used in Food Service Establishment.

### 3. Analysis of Equipment used in Quantity Cookery in Food Service Establishment

## **References:**

- Green Erric (1986): Profitable Food And Beverage Management Operations, John Williams Company
- Jagmohan Negi: Managing Hotels and Restaurants, Authors Press, Delhi.
- Peter F. Drucker: The Practice of Management, Allied Publishers limited.
- Sethi Mohini (2007): Catering Management & Integrated Approach, Wiley Publication.
- T. Ramaswamy: Principles of Management, Himalaya Publication.
- Verghese Brian: Professional Food and Beverage Management, MacMillan India Ltd.
- West B.B. & Wood L. (1988): Food Service in Institutions, John Wiley & Sons, New York