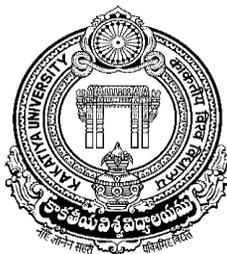


**CURRICULUM FOR  
B.Sc Life Science Subject:**

# **NUTRITION & DIETETICS**

**IN UNDER GRADUATE DEGREE PROGRAMME CBCS SYLLABUS**

WITH EFFECT FROM  
ACADEMIC YEAR 2020-2021



**KAKATIYA UNIVERSITY  
WARANGAL, TELANGANA STATE, INDIA**

**B.Sc. NUTRITION & DIETETICS Syllabus, Kakatiya University, Warangal**  
**CBCS pattern in Semester System (w.e. from 2020-21)**

**SEMESTER PATTERN**

| Year   | Sem | Code   | Course Title                                  | Course Type | HPW     | Credits |
|--------|-----|--------|---|-------------|---------|---------|
| FIRST  | I   | BS 104 | Introduction to Nutrition & Dietetics         | DSC - 1A    | 4T+2P=6 | 4+1=5   |
|        | II  | BS 204 | Nutritional Biochemistry and Human Physiology | DSC -1B     | 4T+2P=6 | 4+1=5   |
| SECOND | III | BS 305 | Normal and Therapeutic Nutrition              | DSC- 1C     | 4T+2P=6 | 4+1=5   |
|        | IV  | BS 405 | Diet in Disease                               | DSC- 1D     | 4T+2P=6 | 4+1=5   |
| THIRD  | V   | BS 504 | A- Clinical Dietetics                         | DSE-1E      | 4T+2P=6 | 4+1=5   |
|        |     | BS 505 | B- Diet Therapy                               | DSE-2E      |         |         |
|        | VI  | BS 604 | A-Public Health Nutrition                     | DSE-1F      | 4T+2P=6 | 4+1=5   |
|        |     | BS 605 | B-Community Nutrition                         | DSE-2F      |         |         |
|        |     | BS 603 | Project Work/Optional                         |             |         | 4       |

  
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**B. Sc. I YEAR - SEMESTER - I**

---

**PAPER-I: INTRODUCTION TO NUTRITION & DIETETICS (Theory)**

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**Theory:** 4 hrs/week; Credits : 4 Marks : 100 (Internal-20, External-80)  
**Practical:** 3 hrs/week; Credits : 1 Marks : 25

**UNIT I: INTRODUCTION TO FOOD GROUPS, CEREALS & MILLETS & PURE CARBOHYDRATES**

- 1.1 Definition- Food, nutrition, nutrients; food groups based on functions, origin and nutritive value; Food guide pyramid, balanced diet
- 1.2 Cereals and Millets - Composition, nutritive value and nutrient losses during processing; breakfast cereals
- 1.3 Sugars - Types of sugars and stages of sugar cookery
- 1.4 Jaggery - Manufacture and stages of jaggery cookery

**UNIT II : PULSES & LEGUMES, NUTS & OIL SEEDS AND FATS & OILS**

- 2.1 Pulses & Legumes - Composition, nutritive value, nutrient losses during processing, importance of germination and malting; anti nutritional factors
- 2.2 Nuts & Oilseeds – Nutritive value, toxins and role in cookery
- 2.3 Fats & Oils – Composition, nutritive value, properties- physical and chemical, functions of oils and fat in foods
- 2.4 Rancidity of Oils- Types and prevention

**UNIT III: VEGETABLES, FRUITS & FOOD PRESERVATION**

- 3.1 Vegetables - Classification, composition and nutritive value, changes during cooking, loss of nutrients during cooking, storage, factors affecting storage
- 3.2 Fruits - Classification, composition, nutritive value, storage and ripening
- 3.3 Enzymatic browning and its prevention
- 3.4 Food preservation – principles, methods- dehydration, low temperature, high temperature and preservatives.

**UNIT IV: ANIMAL FOODS AND FOOD ADULTERATION**

- 4.1 Milk- Composition, nutritive value, fermented and non-fermented milk products
- 4.2 Egg - Composition, nutritive value and quality ; poultry- Classification, composition and nutritive value
- 4.3 Meat -Nutritive Value and changes during cooking; fish - classification, composition and nutritive value
- 4.4 Food Adulteration- intentional and incidental

**Books Recommended:**

Text Books

- ❖ Srilakshmi B- Food Science, 5<sup>th</sup> Edition, New Age International Publishers, New Delhi – 110002, 2011.

Reference Books

- ❖ Shakuntala Manay N - Food Facts and Principles, New Age International Publishers, New Delhi – 110002, 2005.
- ❖ Norman Potter N -Food Science, CBS Publishers and Distributors, New Delhi – 110002, 2007.

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**B. Sc. I YEAR - SEMESTER - I**

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**PAPER-I: INTRODUCTION TO NUTRITION & DIETETICS (Practical)**

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I. Standardization, Preparation and Nutritive value calculation of the recipes based on the following food group and combination

1. Cereal, millet and malting of grains
2. Pulse, germination of grains
3. Cereal-pulse combination
4. Stages of sugar cookery, preparation with jiggery

II. Methods of Preservation of

5. Fruits- Squashes and jams
6. Vegetables by Pickling

III. 7. Determination of quality of an egg

IV. Detection of Adulterants

8. Water, urea and starch in milk
9. Hydrogenated fat in ghee and butter
10. Identification of food colours and textile colours

**Books Recommended:**

- ❖ Srilakshmi B- Food Science, 5<sup>th</sup> Edition, New Age International Publishers, New Delhi – 110002, 2011.
- ❖ Longvah T. , Ananthan R. , Bhaskarachary K. and Venkaiah K. Indian Food Composition Table, National Institute of Nutrition, Tarnaka, 2017.

  
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**B. Sc. I YEAR - SEMESTER - II**

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**PAPER-II: NUTRITIONAL BIOCHEMISTRY AND HUMAN PHYSIOLOGY (Theory)**

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**Theory:** 4 hrs/week; Credits : 4 Marks : 100 (Internal-20, External-80)  
**Practical:** 3 hrs/week; Credits : 1 Marks : 25

**UNIT-I: MACRO NUTRIENTS**

- 1.1 Carbohydrates - Composition, classification, sources, functions, deficiency and excess, glycolysis, citric acid cycle, glycogenesis, glycogenolysis and gluconeogenesis
- 1.2 Lipids - Composition, classification, sources and functions; deficiency and excess of fats; essential fatty acids, beta-oxidation and synthesis of fatty acids.
- 1.3 Proteins- Composition, classification, sources, functions, deficiency and excess, basic steps in protein synthesis
- 1.4 Amino acids- Classification - chemical and nutritional; deamination, transamination and urea cycle

**UNIT II: MICRONUTRIENTS, WATER, ELECTROLYTES AND ENZYMES**

- 2.1 Vitamins - Classification, sources, functions and deficiency symptoms of fat soluble and water soluble vitamins
- 2.2 Minerals - Classification, sources, functions and deficiency symptoms of macro and micro minerals
- 2.3 Water - Functions, distribution, intake and elimination, water balance Electrolytes - Concentrations in intracellular and extra cellular fluids and osmotic pressure; acid base balance
- 2.4 Enzymes – Definition, classification (IUBMB), properties, mechanism of enzyme action

**UNIT III: CELL, CIRCULATORY SYSTEM, NERVOUS SYSTEM AND ENDOCRINE SYSTEM**

- 3.1 Cell- Structure & functions
- 3.2 Circulatory system- Parts & functions of heart, heart rate, cardiac cycle, cardiac output; blood pressure, Blood- Composition, coagulation and blood groups
- 3.3 Nervous system – Classification and functions
- 3.4 Hormones- Endocrine glands their secretion and functions

**UNIT-IV: RESPIRATORY, DIGESTIVE AND EXCRETORY SYSTEM**

- 4.1 Respiratory system- Parts and functions, mechanism of respiration; oxygen and Carbon- di-oxide transport
- 4.2 Digestive system- Parts and functions of GI tract, digestive glands, digestion, absorption and transport
- 4.3 Excretory system - Urinary system – parts and functions, structure of nephron, formation of urine
- 4.4 Skin: functions and its role in regulation of body temperature

## **Books Recommended**

### **Text Books:**

- Chatterjee C.C., Human Physiology, Vol. I & II, Medical Allied Agency, Calcutta (1987).
- AVSS Rama Rao - A Text Book of Bio Chemistry, 9<sup>th</sup> edition, UBS Publishers distribution Pvt. Ltd, 2002.

### **Reference Books:**

- Swaminathan N - A Handbook of Food and Nutrition, 5<sup>th</sup> edition volume 1, Bangalore printing and publishing Co.Ltd, 1986.
- Mahtab S. Bamji, N Prahlad Rao, Vinodini Reddy -Text book of Human Nutrition, 2<sup>nd</sup> edition, Oxford and IBH publishing Co. Pvt. Ltd 2004.
- Swaminathan M, Advanced Textbook on Food and Nutrition, Vol. I, Bappco.



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**B. Sc. I YEAR - SEMESTER - II**

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**PAPER-II: NUTRITIONAL BIOCHEMISTRY AND HUMAN PHYSIOLOGY (Practical)**

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1. Qualitative tests of carbohydrates
2. Qualitative tests of amino acids and proteins
3. Quantitative analysis of calcium by titrimetry
4. Quantitative analysis of vitamin C 2,6 dichloro indophenol dye method
5. Determination of rancidity parameters: acid value, peroxide value
6. Estimation of hemoglobin
7. Estimation of blood glucose
8. Identification of blood group
9. Estimation of urinary glucose
10. Estimation of urinary albumin

**Books Recommended**

- Raghuramulu, Madhavan nair, Kalyansundram, A manual of laboratory techniques, NIN. Hyderabad (2003).
- Sawhney SK, Randhir Singh, Introductory practical biochemistry, Nasora Publishers, New Delhi (2000).

  
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**PAPER-III: NORMAL AND THERAPEUTIC NUTRITION (Theory)**

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**Theory: 4 hrs/week; Credits : 4 Marks : 100 (Internal-20, External-80)**  
**Practical: 3 hrs/week; Credits : 1 Marks : 25**

**UNIT-I : MEAL PLANNING**

- 1.1 RDA- factors affecting RDA, derivation; Principles of meal planning; Steps involved in planning a meal
- 1.2 Adulthood – Nutritional Requirements for an Adult Man and Adult Woman
- 1.3 Pregnancy – Physiological Changes, Increase in Nutritional Requirement  
Complications of Pregnancy
- 1.4 Lactation – Role of hormones in milk production, Increase in Nutritional Requirement and Lactogogues

**UNIT-II : NUTRITION THROUGH LIFE CYCLE**

- 2.1 Infancy – Nutritional Requirement, Importance of Breastfeeding, Artificial Feeding (Comparison of various milks Vs Human Milk), Weaning and Supplementary Food
- 2.2 Pre-Schoolers and School Going Child – Nutritional Requirement and School Lunch Programmes
- 2.3 Adolescence – Nutritional Requirement, Eating Disorders
- 2.4 Geriatrics – Nutritional Requirement, Physiological changes and Dietary Modification

**UNIT-III: INTRODUCTION TO THERAPEUTIC NUTRITION**

- 3.1 Introduction to therapeutic nutrition, dietary supplements and adjuncts to diet therapy, therapeutic modifications of normal diets in terms of Nutrients, Consistency
- 3.2 Special feeding methods- Enteral feeding and Parenteral feeding
- 3.3 Fevers-Definition, Causes (Exogenous and Endogenous), Types – Typhoid Causative organism, Symptoms, Principles of the Diet, Dietary Modifications, Foods to Be included and Foods to Be Avoided
- 3.4 Tuberculosis - Causative Organism, Symptoms, Principles of the Diet, Dietary Modifications, Foods to be Included and Foods to be avoided

**UNIT-IV: DIET IN GENETIC DISORDERS AND FOOD ALLERGY**

- 4.1 Inborn Errors of Metabolism; Phenylketonuria – Definition, symptoms, Dietary management
- 4.2 Galactosemia - Definition, symptoms, Dietary management
- 4.3 Lactose Intolerance- Definition, symptoms, Dietary management
- 4.4 Food Allergy–Definition, Classification, Clinical Signs and Symptoms, Food as Allergens.

  
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## **Books Recommended:**

### **Text Books:**

- ❖ Srilakshmi B – Dietetics, 5<sup>th</sup> edition, New Age International publishers, 2002.

### **Reference Books**

- ❖ Antia F.P - Clinical Dietetics and Nutrition, Oxford University Press, New Delhi, 2003.
- ❖ Mahtab S. Bamji, N Prahlad Rao, Vinodini Reddy -Text book of Human Nutrition, 2<sup>nd</sup> edition, Oxford and IBH publishing Co. Pvt. Ltd, 2004.
- ❖ Swaminathan, M - Essentials of Food and Nutrition, Vol 2, Bangalore Printing and Publishers Co Ltd, Bangalore, 1985.



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**PAPER-III: NORMAL AND THERAPEUTIC NUTRITION (Practical)**

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1. Standardization of Weights and Measures
2. Planning, Calculation and Preparation of Diet for
  - Adulthood- Male and Female
3. Planning, Calculation and Preparation of Diet for physiological conditions
  - Pregnancy
  - Lactation
4. Planning, Calculation and Preparation of Diet for Infancy -Weaning Mix
5. Planning, Calculation and Preparation of Diet for Preschoolers
6. Planning, Calculation and Preparation of Diet for School Going Child- Packed Lunch
7. Planning, Calculation and Preparation of Diet for Adolescence- Boy and Girl
8. Planning, Calculation and Preparation of Diet for Geriatrics
9. Planning, Calculation and Preparation of Diet for clear fluid, full fluid and soft diet
10. Planning, Calculation and Preparation of Diet for Fevers- typhoid, Tuberculosis

**Books Recommended**

- ❖ Srilakshmi B – Dietetics, 5<sup>th</sup> edition, New Age International publishers, 2002.
- ❖ Longvah T. , Ananthan R. , Bhaskarachary K. and Venkaiah K. Indian Food Composition Table, National Institute of Nutrition, Tarnaka, 2017.
- ❖ Indian Dietetic Association, Clinical Dietetics Manual 2<sup>nd</sup> Edition

  
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**PAPER-IV: DIET IN DISEASE (Theory)**

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**Theory:** 4 hrs/week; **Credits:** 4 **Marks:** 100 (Internal-20, External-80)  
**Practical:** 3 hrs/week; **Credits:** 1 **Marks:** 25

**UNIT I: ENERGY METABOLISM**

- 1.1 Energy metabolism- Measurement of energy by direct and indirect calorimetry, determination of energy value of food by bomb calorimeter and benedicts oxy calorimeter
- 1.2 Energy balance, Factors affecting TEE - BMR, Physical Activity, SDA
- 1.3 Underweight- Definition, Causes, Principles of the Diet, Dietary Modifications, Foods to Be Included and Foods to be Avoided
- 1.4 Obesity - Definition, Causes, Assessment (BMI, Body Weight, Brokas Index), Type (Grade I, II, II, Apple and Pear shape) Complications, Principles of the Diet Dietary Modifications , Foods To Be Included And Foods To Be Avoided

**UNIT II: DIET IN DIABETES AND CARDIO VASCULAR DISEASES**

- 2.1 Diabetes - Definition, Causes, Types, T2DM- risk factors, Signs, Symptoms, Complications and Dietary Modifications
- 2.2 T1DM- risk factors, Signs, Symptoms, Complications and Dietary Modifications
- 2.3 Hypertension- Definition, Causes, Types, risk factors, Signs, Symptoms, Complications and Dietary Modifications
- 2.4 Atherosclerosis - Definition, Causes, risk factors, Signs, Symptoms, Complications and Dietary Modifications

**UNIT III: DIET IN GASTRO – INTESTINAL DISEASES**

- 3.1 Diarrhoea - Definition, causes, types, symptoms, complications and dietary Modifications, foods to be included and foods to be avoided
- 3.2 Constipation - Definition, causes, types, symptoms, complications and dietary modifications, foods to be included and foods to be avoided
- 3.3 Peptic Ulcer - Definition, causes, types, symptoms, complications and dietary modifications, foods to be included and foods to be avoided
- 3.4 Celiac disease, tropical sprue, irritable bowel syndrome, inflammatory bowel disease- Definition, Symptoms

**UNIT IV: DIET IN LIVER AND PANCREATIC DISEASES**

- 4.1 Hepatitis - Definition, Causes, Types, Symptoms, Complications and Dietary Modifications, Foods to Be Included and Foods to Be Avoided
- 4.2 Cirrhosis - Definition, Causes, Symptoms, Complications and Dietary Modifications, Foods to Be Included and Foods to Be Avoided
- 4.3 Gall stones - Definition, Causes, Symptoms, Complications and Dietary Modifications, Foods to Be Included and Foods to Be Avoided
- 4.4 Pancreatitis- Definition, Causes, Types, Symptoms, Complications and Dietary Modifications, Foods to Be Included and Foods to Be Avoided

## **Books Recommended:**

### **Text Books:**

- ❖ Srilakshmi B – Dietetics, 5<sup>th</sup> edition, New Age International publishers, 2002.

### **Reference Books**

- ❖ Antia F.P - Clinical Dietetics and Nutrition, Oxford University Press, New Delhi, 2003.
- ❖ Mahtab S. Bamji, N Prahlad Rao, Vinodini Reddy -Text book of Human Nutrition, 2<sup>nd</sup> edition, Oxford and IBH publishing Co. Pvt. Ltd, 2004.
- ❖ Swaminathan, M - Essentials of Food and Nutrition, Vol 2, Bangalore Printing and Publishers Co Ltd, Bangalore, 1985.

  
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**B. Sc. II<sup>nd</sup> YEAR - SEMESTER - IV**

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**PAPER-IV: DIET IN DISEASE (Practical)**

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- I. Planning, Calculation and Preparation of Diets for
  1. Underweight
  2. Obesity
  
- II. Planning, Calculation and Preparation of Diets for
  3. Diabetes- T2DM
  4. Hypertension
  
- III. Planning, Calculation and Preparation of Diets for gastro intestinal diseases
  5. Diarrhea
  6. Constipation
  7. Peptic Ulcer
  
- IV Planning, Calculation and Preparation of Diets for Liver diseases
  8. Hepatitis
  9. Cirrhosis
  10. Gall stones

**Books Recommended**

- ❖ Srilakshmi B – Dietetics, 5<sup>th</sup> edition, New Age International publishers, 2002.
- ❖ Longvah T. , Ananthan R. , Bhaskarachary K. and Venkaiah K. Indian Food Composition Table, National Institute of Nutrition, Tarnaka, 2017.
- ❖ Indian Dietetic Association, Clinical Dietetics Manual 2<sup>nd</sup> Edition

  
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**PAPER-V: A-BASIC DIETETICS (Theory)**

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**Theory:** 4 hrs/week; **Credits: 4** **Marks : 100 (Internal-20, External-80)**  
**Practical:** 3 hrs/week; **Credits : 1** **Marks : 25**

**UNIT-I**

- 1.1 Concept in Basic Dietetics, Nutritional Assessment
- 1.2 Nutritional Care Process
- 1.3 Modified hospital diets-Consistency and texture modifications, Nutrient modifications, Food and Nutritional labelling.
- 1.4 Nutrition and Weight Management

**UNIT-II**

- 2.1 Diets for gastro - intestinal disorders, constipation, diarrhoea, peptic ulcer.
- 2.2 Diet for renal diseases - Nephritis, Nephrotic syndrome and renal failure.
- 2.3 Diet for obesity and cardiovascular disorders. Nutrition support in metabolic disorders.
- 2.4 Diet for Diabetes mellitus.

**UNIT-III**

- 3.1 Diet & nutrition in kidney diseases.
- 3.2 Nutrition in cancer. Dietary management of cancer patients
- 3.3 Nutrition in Immune system dysfunction, AIDS & Allergy.
- 3.4 Nutrition in burns and surgery.

**UNIT-IV**

- 4.1 Nutrition - Addictive behaviour in anorexia, nervosa, bulimia & alcoholism.
- 4.2 Feeding the patients - Psychology of feeding the patient, assessment of patient needs.
- 4.3 Feeding infants & children - problems in feeding children in hospitals.
- 4.4 Nutrition & diet clinics - Patients checkup and dietary counseling, educating the patient and followup

  
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### **Books Recommended**

- Sri Lakshmi B., Dietetics, New Age International P. Ltd. Publishers
- Antia F.P. Clinical Dietetics and Nutrition, Oxford University Press, Delhi.
- Robinson C.H., Lawler M.R., Chenoweth, W.L. and Garwick A. E., Normal and Therapeutic Nutrition, Mac Millan Publishing Co.
- Burtis G, Davis J & Martin S., Applied Nutrition and Diet Therapy, W. B. Saunders Co.
- Swaminathan M., Advanced text book in food and nutrition Vol-II, The Bangalore Printing and Publishing Co.
- Kumud Khanna, Text book of Nutrition and Dietetics, Phoenix Publishing House, New Delhi.

  
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**B. Sc. III<sup>rd</sup> YEAR - SEMESTER - V**

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**PAPER-V: A-BASIC DIETETICS (Practical)**

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1. Standardization of common food preparations.
2. Planning and preparation of Normal diet.
3. Planning and preparation of liquid diet.
4. Planning and preparation of soft diet.
5. Planning and preparation of low calorie reducing diet.
6. Planning and preparation of Bland diet for Peptic Ulcer.
7. Planning and preparation of diets for Infectious Hepatitis and Cirrhosis of liver.
8. Planning and preparation of diet for Diabetes mellitus.
9. Planning and preparation of diets for Atherosclerosis and Hypertension.
10. Planning and preparation of diets for Nephritis and Nephrotic syndrome.

  
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**PAPER-V: B-DIET THERAPY (Theory)**

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**Theory:** 4 hrs/week; **Credits : 4** **Marks : 100 (Internal-20, External-80)**  
**Practical:** 3 hrs/week; **Credits : 1** **Marks : 25**

**UNIT-I**

- 1.1 Role of dietitian: The hospital & community. Basic concepts of diet therapy.
- 1.2 Principles of diet therapy & therapeutic nutrition for changing needs. It should corner all age groups.
- 1.3 Adaptation of normal diet for changing needs.
- 1.4 Routine hospital diets - Regular diet, light diet, full liquid and tube feeding.

**UNIT-II**

- 1.1 Energy modifications and nutritional care for weight management: Assessment, etiology, complications, prevention and treatment of obesity and underweight.
- 1.2 Diet in disease of the endocrine pancreas: Classification, symptoms and diagnosis of diabetes mellitus. DM management through Insulin therapy.
- 1.3 Oral hypoglycaemic agents, glucose monitoring at home, dietary care and nutrition therapy, meal plan (with and without insulin), special diabetic foods and artificial sweeteners.
- 1.4 Dietary management of Hepatitis, cirrhosis, Jaundice, fatty liver, cholecystitis and cholelithiasis, Hepatic coma. Pancreatitis

**UNIT-III**

- 3.1 Hypertension: classification, aetiology, symptoms and dietary management.
- 3.2 Diseases of the cardiovascular system: Definition of infarct, ischemia, angina pectoris, myocardial infarction, heart attack and stroke.
- 3.3 Atherosclerosis and hyperlipidaemias – classification, symptoms, dietary and lifestyle management.
- 3.4 Prevention of cardiovascular diseases.

**UNIT-IV**

- 4.1 Renal Diseases: Etiology, symptoms and dietary management of acute and chronic Glomerulonephritis.
- 4.2 Nephrotic syndrome - dietary management.
- 4.3 Uraemia – dietary Nephrolithiasis - dietary management.
- 4.4 Use of sodium and potassium exchange list. Nephrolithiasis - dietary management. Use of sodium and potassium exchange list.

  
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## **Books Recommended**

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- Sri Lakshmi B. Dietetics, New Age International (P) Ltd., Publishers.
- Burtis G., Davis J. and Martin S. Applied Nutrition and Diet Therapy, W.B. Saunders Co.
- Kumud Khanna, Text book of Nutrition and Dietetics, Phoenix Publishing House P. Ltd. New Delhi.
- Sue Rodwell Williams, Nutrition and Diet Therapy, Times, Mirror/Mosby, College publishing, St. Louis.

  
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**PAPER-V: B-DIET THERAPY (Practical)**

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1. Routine Hospital Diets
2. Planning and preparation of diets with modified residue for Diarrhea and Constipation.
3. Planning and preparation of diets for Hepatic Coma and Influenza.
4. Planning and preparation of diets for Hyperlipidemia and Congestive Heart Failure.
5. Planning and preparation of diets for Burns patients.
6. Planning and preparation of diets for Cancer.
7. Preparation of diet chat for Diabetic patients.
8. Preparation of diet chat for patients with cardiovascular ailments
9. Preparation of diet chat for cancer patients
10. Preparation of diet chat for nutritional disorders like –anemia, obesity, underweight

  
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**B. Sc. III<sup>rd</sup> YEAR - SEMESTER - VI**

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**PAPER-VI: A-PUBLIC HEALTH NUTRITION (Theory)**

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**Theory:** 4 hrs/week; Credits : 4 Marks : 100 (Internal-20, External-80)  
**Practical:** 3 hrs/week; Credits : 1 Marks : 25

### **UNIT-I**

- 1.1 Introduction to Public Health Nutrition (PHN)-Definition and Scope, Relation between health and nutrition, productivity and development
- 1.2 Functions and Requirements and effect of deficiency of Macro nutrients-energy, protein, fat and carbohydrate
- 1.3 Functions and Requirements and effect of deficiency of micro nutrients-Vitamin A, B complex, C, D, E and K.
- 1.4 Functions and Requirements and effect of deficiency of minerals-Iron, Calcium, Zinc, Sodium, Potassium, Iodine and Fluoride.

### **UNIT-II**

- 2.1 Introduction to Nutritional Epidemiology
- 2.2 Key components of epidemiology, Demography
- 2.3 Epidemiology and Public Health. Important epidemiological studies.
- 2.4 National and International agencies in community nutrition: FAO, WHO, UNICEF, CARE, ICMR, NIN, CFTRI, ICDS (Integrated Child Development Scheme) and Mid-day Meal Programs.

### **UNIT-III**

- 3.1 Present Scenario of malnutrition in India
- 3.2 Causes of malnutrition-Illiteracy, poverty, social factors.
- 3.3 Implications and strategies of malnutrition
- 3.4 Assessment of nutritional status and nutritional surveillance-Anthropometry, biochemical examination, clinical examination and Dietary survey.

### **UNIT-IV**

- 4.1 Research Methods specific to nutrition, Factors important in study design.
- 4.2 Indirect assessment - Food balance sheets and vital statistics. Nutrition Education- Objectives, Channels of Nutrition education in the community.
- 4.3 Methods of educating the community, Lecture and method demonstrations, Nutrition exhibitions and visual aids.
- 4.4 Fortification and enrichment of foods - Objectives of Fortification, Food fortification programmes in India.

  
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## **Books Recommended**

- Sheila CV. Public Health Nutrition in Developing Countries, Published by Wood head publishing India PVT Ltd, New Delhi.
- Stein, N. Public Health Nutrition: Principles and Practice in community and global health, Jones and Bartlett Learning USA, 2015
- Text book of Human Nutrition, 4thEdition, Ed. by Mahtab S.Bamji, Kamala Krishnaswamy and G.N.V. Brahmam. Oxford and IBH Publishing Co., P. Ltd. New Delhi.
- Srilakshmi B, Nutrition Science, New Age International Publishers.
- Ritchey S.J. and Taper L.J., Maternal and child nutrition, Harper and Row publishers N.Y.
- Swaminathan M. Advanced Text book on Food and Nutrition, Vol-II, The Bangalore Printing and Publishing Co. Ltd.
- Mc Laren D.S. Nutrition in the Community, John Wiley and Sons.
- Gordis Leon. Epidemiology (Fifth edition) , Elsevier Saunders, 2013.
- Barkar, D.J.P., Practical Epidemiology: Churchill pub, Livingstone, 1991
- Public Health at the Crossroads –Achievements and Prospects. Robert Beaglehole and Ruth Bonita 2nd Edition Cambridge University Press

  
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**PAPER-VI: A-PUBLIC HEALTH NUTRITION (Practical)**

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1. Diet and Nutrition Surveys
2. Identifying at risk and vulnerable groups.
3. Assessment of nutritional status: Anthropometry- Height, Weight, BMI
4. Assessing the dietary intakes of Adolescent girls using a diet survey
5. Community diagnosis and identification of areas of nutrition-health education.
6. Visits to observe the working of Nutrition and Health oriented Programmes-a govt. school to observe the mid day meal program
7. Visit to an ICDS (Integrated Child Development Scheme) Project Center
8. Visit to UNICEF to observe Child Nutrition Programs

  
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**PAPER-VI: B-COMMUNITY NUTRITION (Theory)**

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**Theory:** 4 hrs/week; Credits : 4 Marks : 100 (Internal-20, External-80)  
**Practical:** 3 hrs/week; Credits : 1 Marks : 25

### UNIT-I

- 1.1 Definition of Balanced diets, RDA, Factors affecting RDA, ICMR recommendations.
- 1.2 Food pyramid, my food plate.
- 1.3 Food Exchange List (raw), food composition tables.
- 1.4 Principles & objectives of meal planning. Nutrient requirement & meal planning for adults, changes in nutrient requirement according to sex, age & activity.

### UNIT-II

- 2.1 Nutrient requirement & RDA for Expectant mother-physiological changes, dietary modification & complications.
- 2.2 Nutritional requirement for Lactation-general dietary guidelines & role of special foods.
- 2.3 Nutritional requirement for pregnancy women.
- 2.4 Nutritional requirement for Infancy-growth & development, breast feeding v/s artificial feeding, factors to be considered while preparing & introducing supplementary foods.

### UNIT-III

- 3.1 Nutritional requirement for preschoolers-problems in feeding, factors affecting nutritional status.
- 3.2 Nutritional requirement for School going child-importance of breakfast, packed lunch & mid-daymeal programs-ICDS, SNP.
- 3.3 Nutritional requirement for Adolescence-eating disorder, anemia, anemia prophylaxis program.
- 3.4 Geriatrics-RDA & nutritional requirement during old age, physiological changes & dietary modification.

### UNIT-IV

- 4.1 Assessment and management of moderate and severe malnutrition among children, Micronutrient malnutrition among preschool children.
- 4.2 Child health and morbidity, neonatal, infant and child mortality, link between mortality and malnutrition.
- 4.3 Maternal health and nutritional status, maternal mortality and issues relating to maternal health
- 4.4 Overview of maternal and child nutrition policies and programmes.

  
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## **Reference Books:**

- Sri Lakshmi. B-Dietetics, New Age International Publishers, New Delhi-110002, 2011.
- Sri Lakshmi. B-Nutrition Science, 5th Edition, New Age International Publishers, New Delhi-110002, 2011
- Wadhwa A and Sharma S (2003). Nutrition in the Community-A Textbook. Elite Publishing House Pvt. Ltd. New Delhi.
- Park K (2011). Park's Textbook of Preventive and Social Medicine, 21st Edition. M/s Banarasidas Bhanot Publishers, Jabalpur, India.
- Text book of Human Nutrition, 4th Edition, Ed. by Mahtab S. Bamji, Kamala Krishnaswamy and G.N.V. Brahmam. Oxford and IBH Publishing Co., P. Ltd. New Delhi.



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**PAPER-VI: B-COMMUNITY NUTRITION (Practical)**

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1. Planning of diets
  - Adult-according to sex & activity.
  - Pregnant & lactating women.
  - School going child.
  - Adolescents.
  - Old age group
2. Visit to a Govt. Hospital to observe a new born infant -Premature and full term baby.
3. Preparing charts, models and posters for imparting Nutrition education
4. Preparation of diet chat for pregnant mother.
5. Preparation of diet chat for lactating mother.
6. Preparation of diet chart for old age.
7. Nutrition education to mothers of infants (0-6 months) on importance of breastfeeding.
8. Assessing Nutritional status of mothers using diet survey and anthropometry.
9. Conducting demonstration of a nutritious weaning food for mothers of infants (6 - 12 months of age)
10. Formulation & preparation of weaning mix.

  
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