



ONLINE CERTIFICATION IN NUTRITION By Dt. Deepika Bengani ⁸ Years+ Work Experience in Nutrition Worked in HealtifyMe And VLCC

Course Name – Diploma in Nutrition and Dietetics

Duration – 12 months

SEMESTER-1

Introduction to Nutrition

Module 1: Understanding Carbohydrates

- Introduction to carbohydrates: Types and sources
- Carbohydrate digestion and absorption
- The role of carbohydrates in energy metabolism
- Carbohydrates and blood sugar regulation
- Dietary recommendations and guidelines for carbohydrate intake

Module 2: Exploring Proteins

- Introduction to proteins: Structure and function

- Protein sources and quality
- Protein digestion and amino acid absorption
- Protein metabolism and nitrogen balance
- The role of proteins in muscle building, repair, and immune function
- Protein requirements and recommendations for different populations

Module 3: Unveiling Fats

- Introduction to fats: Types and classification
- Lipid digestion, absorption, and transport
- Functions of fats in the body: Energy storage, insulation, and hormone regulation
- Essential fatty acids and their roles in health
- The impact of dietary fats on cardiovascular health
- Dietary recommendations for fat intake and strategies for incorporating healthy fats into the diet

Module 4: Delving into Minerals

- Introduction to minerals: Major vs. trace minerals
- Functions and sources of key minerals: Calcium, iron, zinc, magnesium, etc.
- Mineral absorption, transport, and storage
- The role of minerals in bone health, blood formation, and enzyme function
- Common mineral deficiencies and their implications for health
- Dietary recommendations for mineral intake and strategies for enhancing mineral absorption

Module 5: Navigating Vitamins

- Introduction to vitamins: Fat-soluble vs. water-soluble vitamins

- Functions, sources, and absorption of key vitamins: Vitamin A, B-complex vitamins, vitamin C, vitamin D, vitamin E, and vitamin K

- The role of vitamins in energy metabolism, immunity, and antioxidant defense

- Vitamin deficiencies and their associated health risks

- Dietary recommendations for vitamin intake and considerations for supplementation

Each module will include lectures, practical demonstrations, case studies, and assessments to ensure comprehensive understanding and application of the knowledge gained in the field of nutrition and dietetics.

Food Science and Technology

Module I. Introduction to Food Science and Technology

- A. Definition and scope of food science
- B. Importance of food science in society
- C. Historical development of food technology

Module 2: Cereal, Grains, and Their Products

- A. Introduction, Structure, Composition, and Nutritive Value of Cereal Grains
- B. Storage of Cereal Grains
- C. Cereal Cookery
- **D.** Cereal Products
- E. Products of Wheat

Module 3: Fruits and Vegetables

- A. Introduction
- B. Composition and Nutritive Value
- C. Pigments: Types and Functions
- D. Criteria for Selection
- E. Changes during Cooking
- F. Storage

Module 4: Fats and Oils

- A. Nutritional Importance
- B. Functions of Fats and Oils in Foods
- C. Sources of Edible Oils
- D. Emulsion and Rancidity

Module 5: Pulses

- A. Composition and Nutritive Value
- B. Toxic Constituents and Processing
- C. Pulse Cookery
- D. Factors Affecting Cooking Quality
- E. Forms and Roles of Pulses

Module 6: Milk and Dairy Products

- A. Introduction and Composition
- **B.** Physical Properties
- C. Nutritional Importance
- D. Milk Processing: Homogenization and Pasteurization
- E. Milk Products and Substitutes

Module 7: Flesh Foods: Meat, Poultry, Fish, and Eggs

- A. Structure and Composition
- B. Nutritional Importance
- C. Types and Classification
- D. Selection Criteria
- E. Effects of Heat and Cooking

Module 8: Food Preservation and Shelf Life Extension

- A. Principles of food preservation: physical, chemical, and biological methods
- B. Preservation techniques: canning, freezing, drying, irradiation, etc.
- C. Factors influencing shelf life and quality deterioration

Module 9: Food Processing and Nutritional Quality

A. Effects of processing on nutrient retention and bioavailability

Module 10: Food Safety and Quality Assurance

- A. Food borne hazards: microbiological, chemical, and physical
- B. Food safety regulations and standards
- C. Good manufacturing practices (GMPs) and Hazard Analysis and Critical Control Points (HACCP)

Fundamentals of Biology and Human Anatomy

Module 1: Introduction to Living Beings

- A. Introduction to Biology
 - Definition of Biology
 - Importance of Studying Living Beings
- B. Characteristics of Living and Non-Living Entities
 - Criteria for Life
 - Distinctions between Living and Non-Living Entities

Module 2: The Cellular World

- A. Animal and Plant Cells: Structure and Functions
 - Anatomy and Organelles of Animal and Plant Cells
 - Functions of Cell Organelles
 - Diagrammatic Representation of Animal and Plant Cells
- B. Methods of Cell Division: Mitosis and Meiosis
 - Overview of Cell Division Processes
- Stages of Mitosis and Meiosis
- Significance of Cell Division in Growth, Repair, and Reproduction

Module 3: Digestive System

- A. Importance of Digestion
 - Role of Digestion in Nutrient Absorption and Energy Production
 - Importance of Enzymes and Digestive Juices
- B. Digestive System: Structure, Functions, and Processes
 - Anatomy of the Digestive Tract
 - Functions of Digestive Organs (Mouth, Stomach, Small Intestine, Large Intestine)
 - Processes Involved in Digestion and Nutrient Absorption

Module 4: Excretory System and Its Disorders

- A. Organs of Excretion
- Overview of Excretory Organs (Kidneys, Ureters, Bladder, Urethra)
- B. Parts of Urinary System
- Anatomy and Function of Each Component
- C. Structure of Nephron
- Anatomy and Function of Nephron
- **D.** Urine Formation
 - Processes Involved in Urine Formation (Filtration, Reabsorption, Secretion)
- E. Abnormalities of Urinary System
- Common Disorders and Diseases of the Urinary System

Module 5: Musculoskeletal System

- A. Anatomy and Physiology of Bone
 - Structure and Composition of Bone Tissue
 - Bone Formation and Remodeling
- B. Function of Bone
 - Support, Protection, and Movement
- C. Structure of Bone
- Types of Bone Tissue (Compact and Spongy Bone)
- D. Parts of Skeletal System
 - Overview of Skeletal Components (Bones, Joints, Cartilage)
- E. Joints and Its Types
 - Classification and Functions of Joints (Synarthroses, Amphiarthroses, Diarthroses)
- F. Muscles: Types and Functions

- Overview of Muscle Types (Skeletal, Cardiac, Smooth)
- Functions of Muscles in Movement and Stability
- G. Muscle Disorders
- Common Muscle Disorders and Diseases

Foundations of Dietetics and Nutrition

Module 1: Introduction to Dietetics

A. Understanding Dietetics
Definition and Scope of Dietetics
Role of Dietitians in Health and Wellness
B. Nutrient Requirements and Recommendations
Definition of Nutrient Requirement
Recommended Dietary Allowances (RDA)
Module 2: Fundamentals of Meal Planning
A. Introduction and Essentials of Meal Planning
Importance of Meal Planning
Components of a Well-Balanced Meal
B. Aims of Meal Planning
Goals for Healthy Eating
Factors Influencing Meal Planning

C. Healthy Eating

Principles of Healthy Eating

Strategies for Balanced Nutrition

D. Food Guide Pyramid

Overview and Components

Guidelines for Using the Food Guide Pyramid

Module 3: Introduction to Food Exchange Lists

A. Understanding Food Exchange Lists

Definition and Purpose

Guidelines for Food Exchanges

B. Application of Food Exchange Lists

Using Food Exchange Lists in Meal Planning

Examples of Food Exchanges

Module 4: Nutrition throughout the Life Cycle

A) Adulthood – Nutrient Needs & RDA, Diet & Feeding Pattern

B) Pregnancy – Introduction, Physiological Changes In Pregnancy, Nutritional Needs & RDA, Complications Of Pregnancy, General Guidelines, Sample Diet Plan

C) Lactation – Introduction, Advantages Of Breast Feeding, Composition Of Breast Milk, Nutrient Needs, RDA, Complications Related To Breast Feeding, Myths During Lactation, Sample Diet Plan

D) Infancy- Growth & Development, Nutrient Needs, RDA & Dietary Guidelines During Infancy, Weaning & Supplementary Foods

E)Childhood (Preschool & School) – Growth & Development, Nutrient Needs, RDA, Dietary Guidelines, Meal Planning, Common Health Problems, Packed Lunch, Healthy Snacking, Diet Plan

F) Adolescence – Growth & Development, Nutrient Needs, RDA, Common Health Problems, Dietary Guidelines, Sample Diet

G) Old Age – Introduction, Ageing & Nutrition, Nutrient Needs, RDA, Factors Affecting Food Intake, Sample Diet Plan

Semester 2

Community Nutrition

Module1: Methods of Assessment of Nutritional Status of Community

Anthropometry

Explanation of Anthropometric Measurements

Importance in Nutritional Assessment

Techniques and Measurements

Height/Length Measurement

Weight Measurement

Mid-Upper Arm Circumference (MUAC) Measurement

Body Mass Index (BMI) Calculation and Interpretation

Biochemical Method

Introduction to Biochemical Assessments in Nutritional Status Evaluation

Clinical Methods

Clinical Examination in Nutritional Assessment Signs and Symptoms Recognizing Clinical Signs of Malnutrition (e.g., Edema, Hair Changes) **Dietary Method** Introduction to Dietary Assessment in Nutritional Evaluation Dietary Assessment Tools Food Frequency Questionnaires 24-hour Dietary Recalls Diet Records

Analysis

Module2: Counseling Skills

Counseling Skills:

- A) What Is Counseling Skill
- B) Counseling Process

Module 3: Nutrition & Health Programmes:

A) Nutrition Programmes: NNP, ICDS, SFP, SNP, Balwadi Feeding Programme, ANP, CNP, Nutrient Deficiency Programmes,

B) Programmes for Communicable Diseases (Diabetes, Cancer Etc),

C) Non Communicable Diseases (Malaria, Leprosy, UIP Etc)

D) Programmes for Communicable & Non Communicable Diseases

Therapeutic Nutrition

Module 1: Therapeutic Modification of Normal Diets

- Definition
- Differentiation between normal and therapeutic diets
- Fluid Diets
- Types of fluid diets and their indications
- Composition and preparation of fluid diets
- Soft Diet
- Definition and purpose of a soft diet
- Foods allowed and restricted on a soft diet
- Total Parenteral Nutrition (TPN) & Enteral Nutrition
- Indications and administration of TPN
- Types of enteral nutrition and their applications

Module 2: Gastrointestinal Disorders

- GERD (Gastro esophageal Reflux Disease).
- Gastritis
- Diarrhea
- Peptic Ulcer
- Ulcerative Colitis
- Lactose Intolerance
- Dysphasia
- Celiac Disease

Module 3: Metabolic Disorders

- Diabetes Mellitus
- Gout
- Hypo & Hyperthyroidism
- Menopause, PCOS & PMS

Module 4: Cardiovascular Disorders

- Hypertension
- Atherosclerosis

Module 5: Liver Disorders

- Jaundice
- Hepatitis
- Liver Cirrhosis
- Diseases Of Gall Bladder

Module 6: Musculoskeletal Disorders

- Osteoarthritis
- Osteoporosis

Module 7: Renal Diseases

- Glomerulonephritis
- Nephrosis
- Renal Stones

Module 8: Nutrition for Allied Clinical Conditions

- Diet For Healthy Skin, Hair And Nails
- Diet For Improving Memory
- Nutrition For Night Shift Workers

Module 9: Nutrition In Cancer

- Introduction And Origin Of Cancer
- Types Of Cancer
- Symptoms
- Nutritional Problems In Cancer Therapy
- Dietary Management In Cancer

Holistic Healing

Module 1: Ayurveda

A) Fundamentals of Ayurveda

Overview of Ayurvedic principles: Tridosha (Vata, Pitta, Kapha), Prakriti (individual constitution)

Ayurvedic diagnosis methods: Pulse diagnosis, Tongue diagnosis, Observation

B) Ayurvedic Treatments

Therapeutic modalities in Ayurveda:

Panchakarma (detoxification), Herbal remedies, Diet and lifestyle recommendations

Module 2: Traditional Chinese Medicine (TCM)

A) Basics of Traditional Chinese Medicine

Philosophy and principles of TCM: Yin-Yang, Five Elements, Qi (Vital Energy), Meridians

Diagnosis methods in TCM: Pulse diagnosis, Tongue diagnosis, Observation

B) Acupuncture and Acupressure

Understanding acupuncture: principles, techniques, and benefits Introduction to acupressure: meridians, pressure points, and applications Hands-on practice and demonstration of acupressure techniques

Module 3: Mind-Body Practices

A) Yoga and Meditation

Introduction to Yoga: Asanas, Pranayama, Meditation techniques Benefits of Yoga and Meditation for physical and mental health