

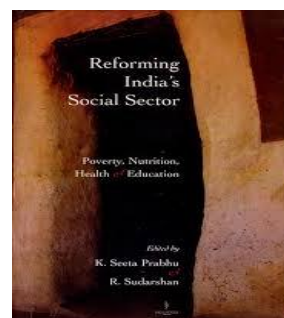
Syllabus
On

Nutrition & Health Education Sector

SKILL DEVELOPMENT INITIATIVE SCHEME (SDIS)

Based on

Modular Employable Skills (MES)



Designed in

2013

Government of India
Ministry of Labour & Employment
Directorate General of Employment & Training

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Course Curricula under Skill Development Initiative Scheme (SDIS) Based on Modular Employable Skills (MES) on Nutrition & Health Education sector

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Skill Development based on Modular Employable Skills (MES)

1. Background:

The need for giving emphasis on Skill Development, especially for the educated unemployed youth (both for rural & urban) has been highlighted in various forums. Unfortunately, our country's current education system does not give any emphasis on development of skills. As a result, most of the educated/uneducated unemployed youths are found wanting in this area, which is becoming their Achilles heel.

As India is on the path of economic development and the share of service sector's contribution to the GDP of the country is increasing (54% of GDP) it is becoming imperative that Government of India along with other nodal agencies play an important role in providing employable skills, with special emphasis on Skills.

Hence, need of the hour is some policy change at Apex level which will address the needs of the changing economy and look at providing mandatory skills training to all educated unemployed youths, with a view to have them gainfully employed. This shift in policy will ultimately benefit all the stake holders, namely the individuals, industry, Government and the economy by way of providing employment, increasing the output/productivity and ultimately resulting in a higher GDP for the nation.

2. Frame work for skill development based on 'Modular Employable Skills (MES)

Very few opportunities for skill development are available for the above referred groups (educated unemployed youth). Most of the existing skill development programmes are long term in nature. Poor and less educated persons cannot afford long term training programmes due to higher entry qualifications, opportunity cost, etc. Therefore, a new framework for skill development has been evolved by the DGET to address the employability issues.

The key features of new framework for skill development are:

- Demand driven short term training courses based on modular employable skills decided in consultation with Industries.
- Flexible delivery mechanism (part time, weekends, full time)
- Different levels of programmes (foundation level as well as skill up gradation) to meet demands of various target groups
- Central Government will facilitate and promote training while vocational training providers (VTP) under the Govt. and Private Sector will provide training.
- Optimum utilization of existing infrastructure to make training cost effective.
- Testing of skills of trainees by independent assessing bodies who would not be involved in conduct of the training programme, to ensure that it is done impartially.
- Testing & certification of prior learning (skills of persons acquired informally)

The Short Term courses would be based on "Modular Employable Skills (MES)".

The concept for the MES is:

- ✓ Identification of minimum skills set. Which is sufficient to get an employment in the Labour market.
- ✓ It allows skills up gradation, multi skilling, multi entry and exit, vertical mobility and lifelong learning opportunities in a flexible manner.
- ✓ It also allows recognition of prior learning (certification of skills acquired informally) effectively.
- ✓ The modules in a sector when grouped together could lead to a qualification equivalent to National Trade Certificate or higher.
- ✓ Courses could be available in different vocations depending upon the need of the employer organizations.
- ✓ MES would benefit different target groups like:
 - Workers seeking certification of their skills acquired informally
 - Workers seeking skill up gradation
 - Early school drop-outs and unemployed
 - Previously child Labour and their family

3. INTRODUCTION

Economic growth in India is increasingly supported by robust industrial growth. **Nutrition & Health Education Sector** is one of the relatively lesser known but significant sectors that support almost all industrial/ commercial activities.

However, notwithstanding its importance and size (INR 4 trillion), it has traditionally not been accorded the attention it deserves as a separate sector in itself. The level of inefficiency in **Nutrition & Health Education Sector** activities in the country has been very high across all modes.

The required pace of efficiency and quality improvement will demand rapid development of capabilities of service providers. And with these **Nutrition & Health Education Sector** activities being a service oriented sector, skill development will emerge as a key capability.

This lack of focus on developing manpower and skills for the sector has resulted in a significant gap in the numbers and quality of manpower in the **Nutrition & Health Education Sector**. This gap, unless addressed urgently, is likely to be a key impediment in the growth of the sector in India and in consequence, could impact growth in industry and commercial/ manufacturing sectors as well. This underscores the need identifying areas where such manpower and skill gaps are critical, and developing focused action plans to improve the situation.

A look at the required initiatives for manpower development in the **Nutrition & Health Education Sector** makes it clear that sustainable development of the sector's manpower requires a collaborative public private effort. The level of commitment demonstrated by each stakeholder would largely determine the direction that the sector heads towards.

4. Age of Participants

The minimum age limit for persons to take part in the scheme is 14 years.

5. Curriculum Development Process :

Following procedure is used for developing course curricula

- Identification of Employable Skills set in a sector based on division of work in the Labour market.
- Development of training modules corresponding to skills set identified so as to provide training for specific & fit for purpose
- Development of detailed curriculum and vetting by a trade committee and by the NCVT (Close involvement of Employers Organizations, State Governments and experts, vocational Training providers and other stakeholders are ensured at each stage).

6. Development of Core Competencies:

Possession of proper attitudes is one of the most important attributes of a competent person. Without proper attitudes, the performance of a person gets adversely affected. Hence, systematic efforts will be made to develop attitudes during the training programme.

The trainees deal with men, materials and machines. They handle sophisticated tools and instruments. Positive attitudes have to be developed in the trainees by properly guiding them and setting up examples of good attitudes by demonstrated behaviors and by the environment provided during training.

Some important core competencies to be developed are:

Core Competencies:

The core competencies developed by the candidates in Level - I are :

- (i) Safety Consciousness and safe working practices
- (ii) Learn continuously
- (iii) Ability to work in a team
- (iv) Proper Communication Skills

- (v) Ability to Analyze and take decisions from GAD
- (vi) Ability to identify the right materials for installation
- (vii) Care for tools and equipments
- (viii) First Aid proficiency
- (ix) Ability to co-ordinate work from other agencies to ensure smooth progress of work at site
- (x) Mechanical Proficiency
- (xi) Punctuality, discipline and honesty
- (xii) Respect for rules and regulations
- (xiii) Quality Consciousness
- (xiv) Positive Attitude and Behavior
- (xv) Responsibility & Accountability
- (xvi) Technical proficiency in installation of elevators
- (xvii) Enhancing the Ride Comfort
- (xviii) Troubleshooting Issues with ease
- (xix) Site Management
- (xx) Leadership
- (xxi) Motivating the work force and ensuring maximum productivity
- (xxii) Identifying and developing the skills of the work force under him.

7. Duration of the Programmes:

Time taken to gain the qualification will vary according to the pathway taken and will be kept very flexible for persons with different backgrounds and experience. Duration has been prescribed in hours in the curriculum of individual module, which are based on the content and requirements of a MES Module. However, some persons may take more time than the prescribed time. They should be provided reasonable time to complete the course.

8. Pathways to acquire Qualification:

Access to the qualification could be through:

An approved training Programme.

9. Methodology

The training methods to be used should be appropriate to the development of competencies. The focus of the programme is on “performing” and not on “Knowing”. Lecturing will be restricted to the minimum necessary and emphasis to be given for learning through practical on-site training for the installation of elevators & escalators.

The training methods will be individual centered to make each person a competent one. Opportunities for individual work will be provided. The learning process will be continuously monitored and feedback will be provided on individual basis. Demonstrations using different models, audio visual aids and equipment will be used intensively.

10. Instructional Media Packages

In order to maintain quality of training uniformly all over the country, instructional media packages (Imps) will be developed by the National Instructional Media Institute (NIMI), Chennai

11. Assessment:

DGE&T will appoint assessing bodies to assess the competencies of the trained persons. The assessing body will be an independent agency, which will not be involved in conducting the training programme. This, in turn, will ensure quality of training and credibility of the scheme. Keeping in view, the target of providing training/testing of one million persons throughout the country and to avoid monopoly, more than one assessing bodies will be appointed for a sector or an area.

12. Certificate:

Successful persons will be awarded competency-based certificates issued by **National Council for Vocational Training (NCVT)**.

Name : Certificate in Child Care and Food Planning (CCFP)
Code : NHE 601
Sector : Nutrition and Health Education

Qualification : Minimum 12th Standard and 18th years of age

Duration : 450Hrs

Faculty Qualification : Post Graduate (M.Sc. Foods and Nutrition) / Post Graduate (M.Sc. Human Development) & a minimum 3 years of relevant work experience.

Batch Size : 25 Students

Power Norms : 1 Kitchen/ Nutrition Lab - 8 plug points (4 x 16 amps; 4 x 5 amps) Anchor or Havells
 2. Classroom - 3 plug points (4 x 16 amps; 4 x 5 amps) Anchor or Havells

Space size :- 1280 Square Feet

1. Classroom - 200 square feet
2. Kitchen/ Nutrition Lab - 500 square feet
3. Store – 80 square feet

Programme Overview: This Programme would make the learners qualified to take up jobs as functionaries with Schools, Government and non-government organizations working for women and children. The objectives are to develop knowledge, understanding and skills with regard to nutrition and child development.

Career Benefits : This course helps to equip an individual to understand the basic concept of nutrition and childcare.

Placements : Aganwadi Centers, Schools and Crèches, NGO's, Health and Wellness Centers, Hospitals, Nursing Homes, Corporate Houses, Gyms and Hotels

| CourseCode | Course Name | Credit Hours |
|------------|---------------------|--------------|
| CCFP-1 | Basic Nutrition | 250Hrs |
| CCFP-2 | Child Care Services | 200Hrs |

COURSE I: Basic Nutrition (250Hrs)

Theory – 125Hrs

Practical – 125Hrs

| Blocks: Knowledge | Learning outcome | Lesson Duration Plan – Theory/Demo/practical |
|--|--|---|
| <u>Block I : Basic Concepts in Nutrition-I</u> | Unit 1 : Human Physiology and Nutrition <ul style="list-style-type: none"> ▪ Human Anatomy and Physiology ▪ Vital Organs and their role ▪ Introduction to Nutrition and Dietetics | Theory – 4 Hrs Demo Practical - 2 Hrs |
| | Unit 2 : Macronutrients - I: Carbohydrates(CHO) and Proteins <p><u>CHO</u></p> <ul style="list-style-type: none"> ▪ Classification, function and metabolism ▪ Dietary Fiber ▪ Dietary Sources ▪ Recommended Dietary Allowances (RDA) <p><u>PROTEINS</u></p> <ul style="list-style-type: none"> ▪ Classification, function and metabolism ▪ Essential and Non Essential Amino Acids ▪ Dietary Sources ▪ Recommended Dietary Allowances (RDA) | Theory – 8 Hrs |
| | Unit 3 : Macronutrients-II : Lipids and Water <p><u>LIPIDS</u></p> <ul style="list-style-type: none"> ▪ Classification, composition and function ▪ SFA, MUFA, PUFA, Trans Fatty Acids ▪ Dietary Sources ▪ Recommended Dietary Allowances (RDA) <p><u>WATER</u></p> <ul style="list-style-type: none"> ▪ Function ▪ Water Balance – Acid and Base ▪ Role of electrolytes – Sodium, Chloride and Potassium <ol style="list-style-type: none"> a. Function b. Absorption and Excretion c. Sources d. RDA | Theory – 8Hrs |
| | Unit 4: Energy Metabolism | Theory – 4Hrs |

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| | <ul style="list-style-type: none"> ▪ Energy In : The Metabolic Rate of Ingested Food ▪ How is food energy transformed in the body ▪ Role of carbohydrates in energy metabolism ▪ Role of lipids in energy metabolism ▪ Role of protein in energy metabolism ▪ Energy Expenditure : Metabolic Rate ▪ How is metabolic rate determined - BMR ▪ Energy calculation as per individual requirement | |
| | <p>Unit 5 : Assessment of Nutritional Status - ABCD</p> <p>1) Anthropometric Assessment : Body Size, Shape & Composition</p> <ol style="list-style-type: none"> a) What are we made of? b) What are common measures of body size? c) Significance of anthropometric measurements d) BMI e) Bioelectrical impedance analysis - Body Composition Analysis (BCA) f) What do circumference measures tell us about body composition (Central Obesity) g) How is body fat distribution determined? h) Measurement cut-offs for Indians <p>Practical – Anthropometric measurement – Weight, height, body part measurement – waist , BCA</p> <p>2) Biochemical Assessment</p> <ol style="list-style-type: none"> a) What are biochemical tests of general nutritional status b) Which blood glucose tests are useful c) Which laboratory tests comprise the lipid profile <p>3) Clinical assessment</p> <ol style="list-style-type: none"> a) What does a wellness physical examination include? b) What information is needed to construct a questionnaire? c) How to measure blood pressure? <p>Practical – Introduction and basic understanding of the common preventive / wellness executive blood tests, Demo of reading clinical symptoms and preliminary recognition of a disease when to refer to a doctor / hospital / clinical nutritionist</p> <p>4) Dietary & Physical Activity Assessment</p> <ol style="list-style-type: none"> a) Diet recall & assessment b) How is physical activity assessed c) Use of observation sheet <p>Practical – Taking 24 hour dietary recall and assessment, use of observation sheet.</p> <p>5) Putting assessment Components together</p> | <p>Theory – 5Hrs</p> <p>Practical – 6 Hrs</p> <p>Theory – 3 Hrs Demo – 6 Hrs</p> <p>Theory – 3 Hrs Demo – 6 Hrs</p> <p>Theory – 3 Hrs</p> <p>Practical – 6 Hrs</p> <p>Theory – 2 Hrs</p> |

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| | a) What is health risk factor analysis? | |
| <u>Block II : Basic Concepts in Nutrition-II</u> | <p>Unit 6 : Micronutrients: Vitamins & Minerals</p> <p>a. Water Soluble - Vitamin B1, B2, B3, B6, B12, Folic Acid & Biotin</p> <ul style="list-style-type: none"> ▪ Absorption, and transport ▪ Metabolism ▪ Function ▪ Food Sources ▪ Deficiency & Toxicity ▪ Requirement – RDA ▪ Assessment <p>b. Fat Soluble Vitamins - Vitamin A,D,E & K</p> <ul style="list-style-type: none"> ▪ Absorption, transport and storage ▪ Metabolism ▪ Function ▪ Food Sources ▪ Deficiency & Toxicity ▪ Requirement – RDA ▪ Assessment <p>c. Minerals – Calcium, Phosphorus, Magnesium, Iron, Iodine, Zinc, Copper, Fluorine, Chromium & Selenium</p> <ul style="list-style-type: none"> ▪ Absorption, transport and storage ▪ Metabolism ▪ Function ▪ Food Sources ▪ Deficiency & Toxicity ▪ Requirement - RDA ▪ Assessment | Theory – 8Hrs |
| | Unit 7 : Role of Antioxidants, Phytochemical and Functional foods | Theory – 4 Hrs |
| <u>Block III : Meal Planning</u> | <p>Unit 7 : Planning Balanced Diets</p> <ul style="list-style-type: none"> ▪ Basic concept of food pyramid ▪ RDA ▪ Role of macro and micro nutrients in daily diet | Theory - 4 Hrs |
| | <p>Unit 8: Fundamentals of meal planning</p> <ul style="list-style-type: none"> ▪ Essential of meal planning ▪ Aim of meal planning ▪ Food exchange lists in meal planning | Theory - 4 Hrs |
| PRACTICAL | 1. Finding Nutritive Value of Foodstuffs | Demo & Practical –6Hrs |
| | <p>2. Weight and Measures</p> <ul style="list-style-type: none"> ▪ Importance of Weights and Measures in cooking ▪ Equipment for Measuring Liquids and Solids ▪ How to measure Liquids, Dry ingredients and | Demo & Practical –6Hrs |

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| | <ul style="list-style-type: none"> ▪ solid fat. ▪ Equivalents to Common Household measures, Liquid Measures, Weight , Oven Temperatures ▪ Weights and Equivalents Measures of Common Foodstuffs | |
| | 3. Methods of Cooking& Regional Meal Patterns | Demo & Practical – 10Hrs |
| | 4.Balanced diet planning – I | Practical – 10 Hrs |
| | Unit 9: Meal Planning for Pregnant and Lactating Women | Theory – 4 Hrs |
| | <ul style="list-style-type: none"> ▪ Growth & developmental changes during pregnancy & lactation ▪ Changes associated – physiological, hormonal, psycho – social ▪ Nutritional requirement & RDA ▪ Complications during pregnancy ▪ Myths & misconceptions related to foods during pregnancy and lactation ▪ Importance of colostrums and breast feeding | |
| PRACTICAL | Pregnant and Lactating diet planning – II | Practical – 6 Hrs |
| | Unit 10: Meal Planning for Infants | Theory - 4 Hrs |
| | <ul style="list-style-type: none"> ▪ Growth & development ▪ Changes associated – physiological, behavioral, psycho – social ▪ Growth chart and immunization schedule ▪ Advantages of breast feeding ▪ Complimentary foods for infants ▪ Nutrition related problems among infancy – Low Birth Weight (LBW) ▪ Nutritional requirement & RDA | |
| PRACTICAL | Infants diet planning – III (Complimentary Food) | Practical – 6 Hrs |
| | <ul style="list-style-type: none"> ▪ Complimentary Foods (Incorporating locally nutrient rich food) ▪ Preparation of ORS Solution ▪ Diet during diarrhea, typhoid, measles ▪ Correct feeding during illness | |
| | Unit 11 : Meal Planning for the Childhood and Adolescent | Theory - 4 Hrs |
| | <ul style="list-style-type: none"> ▪ Growth & development ▪ Changes associated – physiological, hormonal, psycho – social ▪ Nutrition related problems – Anorexia, childhood obesity, SAM ▪ Nutritional requirement & RDA ▪ Planning of healthy Tiffin's menu ▪ Awareness on junk food consumption both in urban as well as in semi urban (Slums) community | |

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| PRACTICAL | Childhood and Adolescent diet planning – IV <ul style="list-style-type: none"> ▪ Healthy Tiffin’s menu ▪ Nutritious Meal | Practical – 6 Hrs |
| | Unit 12 : Management of differently able Children <ul style="list-style-type: none"> ▪ Identification and Management ▪ Diet planning – Soft Diet , Fluid Diet and Semi Solid Diet for children with special abilities ▪ Addressing their special needs | Theory – 4 Hrs Practical – 4 Hrs |
| | Unit 13 : Meal Planning for the Adult <ul style="list-style-type: none"> ▪ Nutritional requirement & RDA ▪ Low cost balanced diet | Theory - 4 Hrs |
| PRACTICAL | Adult Woman and Man diet planning – III | Practical – 6 Hrs |
| | Unit 14: Meal Planning for the Elderly <ul style="list-style-type: none"> ▪ Changes associated with aging – physiological, hormonal, psycho – social ▪ Nutrition related problems among the elderly – Obesity, Under nutrition, Osteoporosis, Diabetes, CVD ▪ Nutritional requirement & RDA | Theory - 4 Hrs |
| PRACTICAL | Elderly Woman and Man diet planning – II | Practical – 6 Hrs |
| <u>Block IV :</u> <u>Effective Utilization of Food Resources</u> | Unit 15 : Food Budgeting Plan and prepare healthy meals within budget <ul style="list-style-type: none"> ▪ Introduction of Low Cost Nutritious Recipes ▪ Novel foods with Food Fortification and supplementation ▪ Methods of cooking that involve low cost rich sources of nutrients ▪ Practical Examples – Have own kitchen garden | Theory - 4Hrs Practical – 4 Hrs |
| | Unit 16 : Food Storage and Safety | Theory – 2 Hrs |
| | Unit 17 : Methods of Maximization of Nutritional Benefit <ul style="list-style-type: none"> ▪ Food fortification and Enrichment ▪ Objectives of Food fortification and Enrichment ▪ Criteria for Food Fortification, Limitations of Food Fortification and Example of Fortified Foods ▪ Fermentation – Advantages and Disadvantages ▪ Fermented Milk and Soya Products ▪ Germination ▪ Supplementation ▪ Introduction of novel foods to improve quality of foods. Refer to foods being developed by CFTRI. | Theory – 3 Hrs |

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| | <p>Unit 18 : Food Labeling</p> <ul style="list-style-type: none"> ▪ Identify Nutrition Related Components – Nutrition Facts, Serving Size, % Daily Value, Vitamins and Minerals and Daily Values. ▪ Nutrition Claim and Health Claim ▪ Importance of Nutrition Labeling ▪ Importance of Reading Nutrition Labels ▪ Understand the Nutrition Facts Panel, Serving Size, Calories – Amount per serving (From Carbohydrates, Fat and Protein), Nutrients – Vitamins and Minerals with Amount, Footnote on the bottom of Nutrition Facts Label, Relation of Daily Values with %DV and %Daily Value. ▪ Understand with help of a sample ▪ FSSAI role and responsibility | <p>Theory -3 Hrs</p> <p>Demo – 3 Hrs</p> |
| | <p>Unit 19 : Food Adulteration</p> | <p>Practical – 8 Hrs</p> |
| <p><u>Block V :</u> <u>Nutrition</u> <u>Related</u> <u>Disorders</u></p> | <p>Unit 20 : Deficiency Diseases-I : SAM and Vitamin A & D</p> | <p>Theory – 4 Hrs</p> |
| | <p>Unit 21 : Deficiency Diseases-II : Anemia, Iodine and other Deficiency Disorders like Vitamin E, and Zinc</p> | <p>Theory –4 Hrs</p> |
| | <p>Unit 22 : Impact of Low birth weight</p> | <p>Theory – 4Hrs</p> |
| | <p>Unit 23 : Nutrition in Infection</p> <ol style="list-style-type: none"> a. HIV b. Diarrhea c. Typhoid d. Jaundice | <p>Theory – 4Hrs</p> |
| | <p>Unit 24 : Lifestyle modification through dietary management and preventive approach :</p> <ol style="list-style-type: none"> a. Under Nutrition b. Over Nutrition (Obesity) c. Gestational Diabetes d. Anorexia e. Bulimia Nervosa f. PCOS | <p>Theory – 10Hrs</p> |
| <p>PRACTICAL</p> | <p>Therapeutic diet planning – I</p> <ul style="list-style-type: none"> ▪ Therapeutic Adaptations of the Normal diet ▪ Diet Planning – for weight management and life style disorders i.e. <ol style="list-style-type: none"> a. Under Nutrition b. Over Nutrition (Obesity) c. Gestational Diabetes d. Anorexia e. Bulimia Nervosa | <p>Practical – 12 Hrs</p> |

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| | f. PCOS <ul style="list-style-type: none"> ▪ Modifications in Consistency – Normal Diet, Mechanical Soft Diet, Fluid Diets (Clear Fluid and Full Fluid) | |
| | Unit 25 : Food Intolerance and Allergy <ul style="list-style-type: none"> ▪ Definition, Symptoms, Common Food Allergens and Risk Factors for developing Food Allergy. ▪ Definition of Food Intolerance ▪ Types of Intolerance – Food Additives, Sulfites and Carbohydrates Intolerance. ▪ Diagnosis, Prevention and Dietary Management of Food Allergy and Food Intolerance. | Theory – 3Hrs Practical – 6 Hrs |

Child Care Services (200Hrs)

This course comprises theory as well practical work. It will orient towards setting up child care centers like crèches and preschools for children up to six years of age. To do so successfully, it is important to understand how children develop from one year to the next. In this Course, it will give insight about the physical, motor, language, cognitive, social and emotional development of children from the time of conception till they are six years of age. The Course will help to develop an understanding about the needs and right of children and give a perspective on the socio-cultural context of childhood. The various ways of fostering children’s development through play activities that are age appropriate as well as interesting. The basic principles of organizing crèches, preschools and day care centers have also been discussed.

To be able to plan play activities for children and organize child care centers successfully, it is important to know what children are like. Observing them and interacting with them gives a better understanding of children’s thoughts and feelings and is, therefore, basic to developing skills to work with them. The practical work has been planned with this view. The practical work has been described as visit to some crèche or nursery schools for better understanding. As apart of practical work, planned will be required to observe children in your neighborhood or home and conduct play activities with them.

This course aims to help in

- Developing a sensitivity towards the needs and rights of children
- Understanding the development of children from birth to six years of age
- Acquiring skills useful in day-to-day interaction with children
- Planning play activities for children that will foster development
- Understanding the principles of organizing child care centers
- Identifying and counseling maladjusted children, child abuse counseling

| Blocks: Knowledge | Learning Outcomes | Lesson Duration Plan – Theory / Demo / Practical |
|---|---|---|
| | | Theory – 108Hrs Practical – 92Hrs |
| <u>Block-1 : Introduction to Child Care and Development</u> | <p>Unit 1 : The Experience of Childhood</p> <ul style="list-style-type: none"> • Experience based Childhood and Development • Impact on Health, Education, Personality and Economic Participation • Optimal Child Development <p>Unit 2 : Basic Concepts in Child Development</p> <ul style="list-style-type: none"> • Child development - a Multi-dimensional and Continuous Process • Cumulative and directional Aspect • Qualitative and Quantitative Growth • Complexity, Differentiation and coordination • Stages of Development – Interaction with Biology and Environment • Developmental Domain – Cognitive, Communicative, Socio-Emotional, Motor and Adaptive Behavior <p>Unit 3 : The Principles of Development</p> <ul style="list-style-type: none"> • Growth and Development – Biological, Psychological and Emotional Changes • Environmental and Genetic Influence during Growth and Development • Developmental Milestones | Theory – 3Hrs Theory – 3 Hrs Theory – 3 Hrs |

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| | <p>Unit 4 : The Needs and Rights of Children</p> <ul style="list-style-type: none"> • Convention on Rights for Children • Right to Development and Education, Survival and Health and Right to Protection • Right to Basic Needs for Children – Nutrition, Care and Support <p>Unit 5 : The Importance of Play in Development</p> <ul style="list-style-type: none"> • Play a tool for learning Skills • Classification and types of Play • Benefits of Play in fostering development <p>Unit 6 : Anger Management</p> <ul style="list-style-type: none"> • Anger – an emotional response to danger • Strategies for Anger Management – Stop, Calm down, Think before you act, Consider the other person’s feelings and look for solutions • Manage Anger Becoming Aggression – Stop the action and restore safety, set limits, follow through with consequences and forgive • Anger depicting an urge for help <p>Unit 7 : Child Psychology and Counseling</p> <ul style="list-style-type: none"> • Social and Developmental Child Psychology • Theory of Counseling and skills • Psychological assessment and managing process of Counseling | <p>Theory – 3 Hrs</p> <p>Theory – 3 Hrs</p> <p>Theory – 3 Hrs</p> <p>Theory – 3 Hrs</p> |
| <p><u>Block-2 : The Child : Development in the First Twelve Months</u></p> | <p>Unit 8 : Prenatal Development and Care</p> <ul style="list-style-type: none"> • Three Stages of Prenatal Development –Germinal, Embryonic and Fetal Stage • Changes by week of gestation and changes by organ • Prenatal Care Check -ups <p>Unit 9 : Physical, Motor and Sensory Development</p> <ul style="list-style-type: none"> • Definition, Speed and pattern of development | <p>Theory – 3Hrs</p> <p>Theory – 3Hrs</p> |

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| | <ul style="list-style-type: none"> • Milestones for Development • Mechanism of Developmental change • Individual Difference <p style="text-align: right;">Theory – 6Hrs</p> <p>Unit 10 : Management of differently abled Children</p> <ul style="list-style-type: none"> • Identification and management of Child with special abilities • Addressing their requirements in terms of physical environment, emotional, social, care and support needed • Management and Addressing the demands of children suffering from <ul style="list-style-type: none"> a. Anxiety disorders b. Eating disorders c. Mood disorders d. Attention –deficit / hyperactivity disorders (ADHD) e. Dementia f. Dysthymia g. Depression h. Autism i. Down Syndrome j. Epilepsy <p style="text-align: right;">Theory – 3Hrs</p> <p>Unit 11: Cognitive Development : The Emergence of Thought</p> <ul style="list-style-type: none"> • Definition, speed and pattern of development – Sensory-motor and Pre-operational Stages • Mechanism of Cognitive Development – Simple Reflexes to Coordination of Means and Ends. <p style="text-align: right;">Theory – 3Hrs</p> <p>Unit 12 : Language Development : The Learning to Speak</p> <ul style="list-style-type: none"> • Structure of Language • Pre-linguistic Stage • Stages of Language Acquisition • Mechanism of Language Development • Environmental and Physical Factors in Language Acquisition <p style="text-align: right;">Theory – 3Hrs</p> <p>Unit 13: Socio-Emotional Development : The first Relationships</p> <ul style="list-style-type: none"> • Signaling and Orienting Behaviors • Definition, Phases – indiscriminate social ability to acceptance of attention <p style="text-align: right;">Theory – 3Hrs</p> <p style="text-align: right;">Practical – 10 Hrs</p> |
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| | <ul style="list-style-type: none"> Emotional Development -Behavior and social Learning <p>Unit 14: Play Activities for Fostering Development</p> <ul style="list-style-type: none"> Guidelines for organizing activities Activities to foster physical motor, social and emotional, cognitive skills and language development. <p>Practical: Development of children friendly tools to enhance their skills and growth development</p> | |
| <p><u>Block-3 : The child : Development During Toddlerhood (13-36 months)</u> 50 Hrs</p> | <p>Unit 15: Physical and Motor Development: Increase in Mobility and Control</p> <ul style="list-style-type: none"> Development of Hand Control and Eye and hand Coordination Object Manipulation Milestone for Motor development Posture and Locomotion, Head control, Self care activities and Elimination control | <p>Theory – 3Hrs</p> |
| | <p>Unit 16: Cognitive Development : Towards Mental Representation</p> <ul style="list-style-type: none"> Concrete Operational and Formal Operational Stages Milestones for Cognitive development | <p>Theory – 3Hrs</p> |
| | <p>Unit 17: Language Development : From Words to Sentences</p> <ul style="list-style-type: none"> Stages in Language Acquisition – Babbling, Lallation, Echolation and Expressive Jargon | <p>Theory – 3Hrs</p> |
| | <p>Unit 18: Socio-Emotional Development : Expanding Relationship and the Emerging Self</p> <ul style="list-style-type: none"> Specific Clear cut Attachment Evaluation of Attachment Factors that affect Attachment and Theories of Attachment Modeling Functional list Theories and features of Functionalist Approach | <p>Theory – 3Hrs</p> |
| <p><u>Block-4 : The Child : Development Preschool Years (3-6 years)</u></p> | <p>Unit 19: Development Physical Strength and Motor Coordination</p> <ul style="list-style-type: none"> Physical growth and development – changes in body | <p>Theory – 3Hrs</p> |

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| | <p>proportions, internal systems and tissues, gross motor and fine motor activity.</p> <ul style="list-style-type: none"> Breathing, Bladder Control and Brain development <p>Unit 20: Development Cognitive Abilities and Understanding Concepts</p> <ul style="list-style-type: none"> Ability to learn, memorize, reason, symbolize through own experience Learning through play activity Understanding and formation of concept: color, shape, size, length, weight, height, thickness, width, mass, distance, time, space, temperature and environment <p>Unit 21: Enhancing Language Skills</p> <ul style="list-style-type: none"> Development of Communication skills - through action and gestures Development of Listening skills Development of Vocabulary Development of Oral Expression Development of Reading readiness Development of Writing skills <p>Unit 22: Social Relationships and Child Rearing</p> <ul style="list-style-type: none"> Behavioral Pattern of Preschoolers Development of Positive self concept and confidence Development of good personal habits Development of qualities of initiative, independence and leadership Learning about culture, value and society at large Child rearing – develop positive and caring attitude, positive reinforcement and emotional security. | <p>Theory – 3Hrs</p> <p>Theory – 3Hrs</p> <p>Theory – 3Hrs</p> |
| <p><u>Block-5 : Play Activities for Preschoolers-I</u></p> | <p>Unit 23: Play Activities for Movement and Mobility</p> <ul style="list-style-type: none"> Activity for development of motor coordination involving gross motor skills involving large muscles. Activity for development of motor coordination involving fine motor skills involving fine muscles. Activity requiring good control over whole body. | <p>Theory – 3Hrs</p> |

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| | <p>Unit 24: Exploring the Environment</p> <ul style="list-style-type: none"> • Free play – indoor and outdoor activities • Projects on various festivals • Group games • Stories and puppet play • Free and structured conversation associated with routine activities <p>Unit 25: Play Activities for Developing Cognitive Abilities and Some Concepts</p> <ul style="list-style-type: none"> • Activities to teach numbers, alphabets, colours, size, shape, weight, thickness and other concepts. • Activities that involve matching, identifying, naming, seriation and classification • Plan a nature walk familiarizing with concepts. <p>Unit 26: Learning Language</p> <ul style="list-style-type: none"> • Telling short stories • Conversation on a topic • Classification activities, group games, dramatization and puppet play. • Encourage child to make rhymes • Role Play | <p>Theory – 3Hrs</p> <p>Theory – 3Hrs</p> <p>Theory – 3Hrs</p> |
| <p><u>Block-6 : Play Activities for Preschoolers-2</u></p> | <p>Unit 27: Fantasy, Story Telling and Dramatization</p> <ul style="list-style-type: none"> • Aids and Techniques used in Fantasy, storytelling and Dramatization • Importance of Fantasy, storytelling and Dramatization • Points to be kept in mind for Fantasy, storytelling and Dramatization • Create own situation, dialogues and experience <p>Unit 28: Art for Children</p> <ul style="list-style-type: none"> • Form of Non-verbal communication - expression of thoughts, knowledge and ideas • Explore different ideas, emotion and feelings • Development of fine motor control • Experiment with colours, lines, forms, shapes, textures and designs. • Coordination and strengthening of visual /motor abilities | <p>Theory – 3Hrs</p> <p>Theory – 3Hrs</p> <p>Theory – 3Hrs</p> |

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| | <p>Unit 29: Rhythm, Music and Movement</p> <ul style="list-style-type: none"> • Encouragement in singing and move with music • Encouragement to make rhyming words and lines of their own. • Unit 30: Nurturing Creativity • Train, guide and help children in Fostering creative thinking • Value Creative thinking • Sensitize children to environmental stimuli • Provide ample opportunities to varied means of expression at home and school | Theory – 3Hrs |
| <p><u>Block-7 : Organizing Child Care Services</u></p> | <p>Unit 31: Child Care Services in India</p> <ul style="list-style-type: none"> • Holt's Partners Agencies in India • Programs and Services Offered in India - children from birth to 6-years-old receive tender, nurturing care from nurses, child development workers, caregivers, therapists and pediatricians. • Agencies - neonatal nurseries for premature or malnourished children. <p>Unit 32: Planning the Curriculum</p> <ul style="list-style-type: none"> • Importance of Curriculum • Features of Good Curriculum Planning and documentation • Meet the National Quality Standard • Documenting and Assessment of Children Learning • Intentional Teaching <p>Unit 33: Setting-up and Running the Centre</p> <ul style="list-style-type: none"> • Role of Child Care Centre • Legislation governing Child Care centres • Pre-requisites for Setting up the centre • Choosing suitable premises • Clearance from relevant Government Authority • Child care centre License • Start Operation • Services to be provided • Planning Child Care Services Programmes and Meals • Staff Requirement <p><u>Practical:</u> Setting up a dummy set for a crèche / day care center</p> <p>Unit 34: Involving the Family and the Community</p> | <p>Theory – 3Hrs</p> <p>Theory – 3Hrs</p> <p>Theory – 3Hrs</p> <p>Practical – 8Hrs</p> <p>Theory – 3Hrs</p> |

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| | <ul style="list-style-type: none"> • Partnership with Family and Community • Getting started, assembling the team, data collection and using data to make decision about priorities • Encourage Positive Parenting skills • Enhance communication with families • Increase volunteerism and attendance at school events • Encourage learning at home • Improving community collaboration <p>Unit 35: Evaluation</p> <ul style="list-style-type: none"> • Effectiveness of the Program • Improvement in Event Planning • Further Amendments in the Process of services | Theory – 3Hrs |
| <u>Practical Part II</u> | It contains some practical exercises related to the Course content. Some of the exercises from a part of the assignments that are required to submit and will be evaluated upon them. | 74Hrs |
| | 1. Organizing Child Care Services : An Overview | Demo – 10Hrs |
| | 2. Setting up and Managing a Child Care Centre | Demo and Practical – 10 Hrs |
| | 3. How to Plan a Good Preschool Centre or a Crèche | Practical – 10 Hrs |
| | 4. Narrating Stories to Children | Practical – 10 Hrs |
| | <p>5. Let's Make Material for toddlers</p> <p>Aids – Action songs, Flannel graph, Flash cards, puppets, cube, toy TV and Masks</p> | Practical – 10 Hrs |
| Visit planned | 6. Two Day visit planned with Toddlers in a Crèche | Practical – 16Hrs |
| | 7. One day visit to a Special Children School | Practical – 8 Hrs |

Nutrition Lab Requirement

I. Cooking Appliance

| Cooking Appliance | Quantity (Nos.) |
|---|-----------------|
| 1. Microwave Oven | 1 |
| 2. All purpose oven – cooking range | 1 |
| 3. Electric Grill/ Sandwich maker | 2 |
| 4. Multipurpose - mixer, grinder, blender, juicer and chopper | 2 |
| 5. Electric whisk | 2 |
| 6. Gas lighter | 15 |
| 7. Refrigerator with freezer | 1 |
| 8. Gas Cylinder | 3-5 |
| 9. Cooking Gas | 15 |

II. Equipment

| Equipment | Quantity (Nos.) |
|--|---|
| 1. Serving set (Full plate, quarter plate, Serving spoons, fork, knife, dessert spoon) | 3 Set |
| 2. Tea/ coffee set (tray, tea pot, milk jug, sugar bowl, strainer, tea spoon) | 3 |
| 3. Mixing bowls (small, medium, large) | 15 each |
| 4. Small multi - purpose bowls | 30 (2 per batch) |
| 5. Pressure cooker | 15 (medium size) |
| 6. Saucepan with covers | 15 small and 15 medium size |
| 8. Tawa and non –stick tawa | 15 |
| 9. Colander | 15 |
| 10. Chopping board (for veg and non –veg) | 15 for veg and 15 for non-veg |
| 11. Ovenproof dishes (bowls - small , medium and large) | 30 small bowls (2 per batch). 15 medium |

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| | and 15 large with covers |
| 12. Baking tray (small, medium and big) | 2 each |
| 13. Knife (palette, all purpose paring knife, bread knife, pastry knife, and peeler) | 15 |
| 14. Spatula | 15 |
| 15. Sauce boat | 2 |
| 16. Moulds – Cake tin, muffin moulds or silicon moulds | 3 cake tin (different shape – round, square, rectangular), 3 muffin moulds and 3 silicon moulds |
| 17. Cutters – different shapes for biscuits | 5 different shapes per batch * 15 |
| 18. Flan ring | 3 |
| 19. Chinese wok | 3 |
| 20. Karahi with covers | 15 |
| 21. Serving spoons, tea spoon, dessert spoons, fork, table spoons, measuring spoons, ladle, wooden spoon and wooden scraper and measuring cups | 3 of each per batch * 15 and 15 measuring spoons and cups |
| 22. Potato Masher | 15 |
| 23. Hand whisk | 15 |
| 24. Food covers | 15 |
| 25. Measuring scale | 2 |
| 26. Kitchen cloth | 2 per batch * 15 |
| 27. Glasses | 15-20 |
| 28. Tong | 15 |
| 29. Lemon/orange squeezer | 3 |
| 30. Flour dredger | 5 |
| 31. Ingredients tray | 15 |
| 32. Dustbins with cover | 15 |
| 33. Hand wash | 15 |
| 34. Liquid / Soap Dish washer | 15 |
| 35. Scotch brite scrubber | 15 |
| 36. Sink brush | 15 |

II. Research

| Equipment | Quantity (Nos.) |
|---|-----------------|
| 1. Reagents (for experiments with food) | |
| 2. Test tubes | 30 |

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| 3. Test tube holder | 15 |
| 4. Wire Gauze | 15 |
| 5. Funnel | 15 |
| 6. Beaker | 30 |
| 7. Glass stirrer | 15 |
| 8. Litmus Paper (pH Paper) | 10 strips |
| 9. Thermometer | 15 |
| 10. Titration range equipment | 1 |
| Measuring apparatus | |
| 11. Measuring flask / cylinder | 10 |
| 12. Measuring scale | 1 |
| 13. Height meter | 1 |
| 14. Measuring height scale for infants | 1 |
| 15. Calipers | 1 |
| 16. Tape measure | 3 |
| 17. BCA machine | 1 |
| 18. Weighing scale | 1 |
| 19. Weighing scale for infants | 1 |
| 20. Sphygmomanometer | 1 |
| 21. Digital measuring BP Apparatus | 1 |
| 22. First aid box | 1 |
| 23. Computer | 1 |
| 24. UPS | 1 |
| 25. Printer | 1 |

III. Basic requirement and dimensions of a work station in a Nutrition Lab for Practical's

Dimension of the counter- 5x7 feet (shared by two gas stoves i.e. 2 students work on either side)Space between two consecutive counters should be at least two and a half feet

Each counter also needs provision of a sink

IV. Furniture

| Furniture | Quantity(Nos.) |
|-------------------------------|----------------|
| Chair | 30 |
| Table | 30 |
| Stool | 2 |
| Cupboard | 2 |
| a. For books | |
| b. For cooking equipments | |
| c. For Ingredients | |
| d. For appliances | |
| Child Friendly furniture | 1 set |
| Doll's House | 1 |
| Sand Pit | 1 |
| Children's Musical Instrument | 1 set |
| Puzzle | 3 set |
| Sand Dolls | 2 |
| Story Books | 1 set of each |

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| a. Alphabetics b. Numbers c. Short stories d. Rhymes | |
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Process of assessment

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| Written and Practical Exam |
| Third Party Assessment: – 1. NCVT 2. Private assessor 3. India Dietary Association (IDA) 4. RDAT |

Name : Certificate in Community Nutrition and Health Education (CNHE)
Code : NHE 602
Sector : Nutrition and Health Education

Qualification : Science Graduates or its equivalent/ 12th Biology Stream
Duration : 450Hrs

Faculty Qualification : Post Graduate (M.Sc. Foods and Nutrition) / M Sc(Public Health Nutrition)& a minimum 3 years of relevant work experience

Batch Size : 25 Students

Power Norms :1 Kitchen/ Nutrition Lab - 8 plug points (4 x 16 amps; 4 x 5 amps) Anchor or Havells
2. Classroom - 3 plug points (4 x 16 amps; 4 x 5 amps) Anchor or Havells

Space size – 1280 Square Feet:

4. Classroom - 200 square feet
5. Kitchen/ Nutrition Lab - 500 square feet
6. Store – 80 square feet

Programme overview : The Programme is a holistic package, which provides opportunities to the learner to gain knowledge about nutrition and public health. It also enables the learners to develop skills in communicating nutrition and health-related information to the community.

The aim of the programme is to develop a knowledge base in areas of nutrition and public health, promote awareness about concepts and principles in communication and their application in nutrition and health education, and develop skills for playing the role of nutrition/health educators in the community.

People desirous of working in either Government or non-governmental sectors in the role of nutrition/health educators would benefit from this programme.

Career Benefits : This course helps to equip an individual to understand the basic concept of community nutrition and health.

Placements: NGO's, PHC, Block development Offices, Government sector

Objectives : To impart basic knowledge related to nutrition and health, as well as to train

learners in imparting this knowledge to the community.

Competencies: On completion of this course the students will have acquired the knowledge and skills to :

- Impart nutrition and health education in the community
- Engage in direct nutrition and health related community based services in the government and private sector
- Be active members of inter-disciplinary teams working in the community.
- Train field functionaries especially paraprofessionals and volunteers in basic concepts of nutrition and health
- Actively contribute to the work of NGOs, CBOs, both national and international working in this area.

| CourseCode | Course Name | Hours Credit |
|-------------------|--|---------------------|
| CNHE- 01 | Basic Nutrition | 250 |
| CNHE- 02 | Community Nutrition and Health Education | 200 |

COURSE I: Basic Nutrition (250Hrs)

Theory – 130Hrs

Practical –120Hrs

| Blocks: Knowledge | Learning outcome | Lesson Duration Plan – Theory/Demo/practical |
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| <u>Block I : Basic Concepts in Nutrition-I</u> | Unit 1 : Human Physiology and Nutrition <ul style="list-style-type: none"> ▪ Human Anatomy and Physiology ▪ Vital Organs and their role ▪ Introduction to Nutrition and Dietetics | Theory – 4Hrs Demo Practical - 2Hrs |
| | Unit 2 : Macronutrients - I: Carbohydrates(CHO) and Proteins <p><u>CHO</u></p> <ul style="list-style-type: none"> ▪ Classification, function and metabolism ▪ Dietary Fiber ▪ Dietary Sources ▪ Recommended Dietary Allowances (RDA) <p><u>PROTEINS</u></p> <ul style="list-style-type: none"> ▪ Classification, function and metabolism ▪ Essential and Non Essential Amino Acids ▪ Dietary Sources ▪ Recommended Dietary Allowances (RDA) | Theory – 8Hrs |
| | Unit 3 : Macronutrients-II : Lipids and Water <p><u>LIPIDS</u></p> <ul style="list-style-type: none"> ▪ Classification, composition and function ▪ SFA, MUFA, PUFA, Trans Fatty Acids ▪ Dietary Sources ▪ Recommended Dietary Allowances (RDA) <p><u>WATER</u></p> <ul style="list-style-type: none"> ▪ Function ▪ Water Balance – Acid and Base ▪ Role of electrolytes – Sodium, Chloride and Potassium <p>e. Function f. Absorption and Excretion g. Sources h. RDA</p> | Theory – 8Hrs |
| | Unit 4: Energy Metabolism <ul style="list-style-type: none"> ▪ Energy In : The Metabolic Rate of Ingested Food ▪ How is food energy transformed in the body | Theory – 4Hrs |

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| | <ul style="list-style-type: none"> ▪ Role of carbohydrates in energy metabolism ▪ Role of lipids in energy metabolism ▪ Role of protein in energy metabolism ▪ Energy Expenditure : Metabolic Rate ▪ How is metabolic rate determined - BMR ▪ Energy calculation as per individual requirement | |
| | <p>Unit 5 : Assessment of Nutritional Status - ABCD</p> <p>2) Anthropometric Assessment : Body Size, Shape & Composition</p> <ol style="list-style-type: none"> a) What are we made of? b) What are common measures of body size? c) Significance of anthropometric measurements d) BMI e) Bioelectrical impedance analysis - Body Composition Analysis (BCA) f) What do circumference measures tell us about body composition (Central Obesity) g) How is body fat distribution determined? h) Measurement cut-offs for Indians <p>Practical – Anthropometric measurement – Weight, height, body part measurement – waist , BCA</p> <p>2) Biochemical Assessment</p> <ol style="list-style-type: none"> a) What are biochemical tests of general nutritional status b) Which blood glucose tests are useful c) Which laboratory tests comprise the lipid profile <p>3) Clinical assessment</p> <ol style="list-style-type: none"> a) What does a wellness physical examination include? b) What information is needed to construct a Health history questionnaire? c) How to measure blood pressure? <p>Practical – Introduction and Basic understanding of the common preventive / wellness executive blood tests, Demo of reading clinical symptoms and preliminary recognition of a disease when to refer to a doctor / hospital / clinical nutritionist</p> <p>4) Dietary & Physical Activity Assessment</p> <ol style="list-style-type: none"> a) Diet recall & assessment b) How is physical activity assessed c) Use of observation sheet <p>Practical – Taking 24 hour dietary recall and assessment, use of observation sheet.</p> <p>5) Putting assessment Components together</p> <ol style="list-style-type: none"> a) What is health risk factor analysis? | <p>Theory – 5Hrs</p> <p>Practical – 6Hrs</p> <p>Theory – 2Hrs Demo – 6Hrs</p> <p>Theory – 3Hrs</p> <p>Practical– 6Hrs</p> <p>Theory – 3Hrs</p> <p>Practical – 6Hrs</p> <p>Theory – 2Hrs</p> |
| <p><u>Block II :</u> <u>Basic</u> <u>Concepts in</u> <u>Nutrition-II</u></p> | <p>Unit 6 : Micronutrients: Vitamins& Minerals</p> <p>d. Water Soluble - Vitamin B1, B2, B3, B6, B12, Folic Acid &</p> | <p>Theory – 10Hrs</p> |

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| | <p>Biotin</p> <ul style="list-style-type: none"> ▪ Absorption, and transport ▪ Metabolism ▪ Function ▪ Food Sources ▪ Deficiency & Toxicity ▪ Requirement – RDA ▪ Assessment <p>e. Fat Soluble Vitamins - Vitamin A,D,E & K</p> <ul style="list-style-type: none"> ▪ Absorption, transport and storage ▪ Metabolism ▪ Function ▪ Food Sources ▪ Deficiency & Toxicity ▪ Requirement – RDA ▪ Assessment <p>f. Minerals – Calcium, Phosphorus, Magnesium, Iron, Iodine, Zinc, Copper, Fluorine, Chromium & Selenium</p> <ul style="list-style-type: none"> ▪ Absorption, transport and storage ▪ Metabolism ▪ Function ▪ Food Sources ▪ Deficiency & Toxicity ▪ Requirement - RDA ▪ Assessment | |
| | Unit 7 : Role of Antioxidants, Phytochemical and Functional foods | Theory – 3Hrs |
| <u>Block III : Meal Planning</u> | <p>Unit 7 : Planning Balanced Diets</p> <ul style="list-style-type: none"> ▪ Basic concept of food pyramid ▪ RDA ▪ Role of macro and micro nutrients in daily diet | Theory - 4Hrs |
| | <p>Unit 8: Fundamentals of meal planning</p> <ul style="list-style-type: none"> ▪ Essential of meal planning ▪ Aim of meal planning ▪ Food exchange lists in meal planning | Theory - 4Hrs |
| PRACTICAL | 1. Finding Nutritive Value of Foodstuffs | Demo & Practical –6Hrs |
| | 2. Weight and Measures | Demo & Practical –6Hrs |
| | <ul style="list-style-type: none"> ▪ Importance of Weights and Measures in cooking ▪ Equipment for Measuring Liquids and Solids ▪ How to measure Liquids, Dry ingredients and solid fat. ▪ Equivalent to Common Household measures, Liquid Measures, Weight , Oven Temperatures ▪ Weights and Equivalent Measures of Common Foodstuffs | |
| | 3. Methods of Cooking& Regional Meal Patterns | Demo & Practical – 10Hrs |
| | 4.Balanced diet planning – I | Practical – 10Hrs |

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| | <p>Unit 9: Meal Planning for Pregnant and Lactating Women</p> <ul style="list-style-type: none"> ▪ Growth & developmental changes during pregnancy & lactation ▪ Changes associated – physiological, hormonal, psycho – social ▪ Nutritional requirement & RDA ▪ Complications during pregnancy ▪ Myths & misconceptions related to foods during pregnancy and lactation ▪ Importance of colostrums and breast feeding | Theory – 4Hrs |
| PRACTICAL | Pregnant and Lactating diet planning – II | Practical – 6Hrs |
| | <p>Unit 10: Meal Planning for Infants</p> <ul style="list-style-type: none"> ▪ Growth & development ▪ Changes associated – physiological, behavioral, psycho – social ▪ Growth chart and immunization schedule ▪ Advantages of breast feeding ▪ Complimentary foods for infants ▪ Nutrition related problems among infancy – Low Birth Weight (LBW) ▪ Nutritional requirement & RDA | Theory - 4Hrs |
| PRACTICAL | Infants diet planning – III (Complimentary Food) | Practical – 6 Hrs |
| | <p>Unit 11 : Meal Planning for the Childhood and Adolescent</p> <ul style="list-style-type: none"> ▪ Growth & development ▪ Changes associated – physiological, hormonal, psycho – social ▪ Nutrition related problems – Anorexia, childhood obesity ▪ Nutritional requirement & RDA | Theory - 5Hrs |
| PRACTICAL | Childhood and Adolescent diet planning – IV | Practical – 6Hrs |
| | <p>Unit 12 : Meal Planning for the Adult</p> <ul style="list-style-type: none"> ▪ Nutritional requirement & RDA ▪ Low cost balanced diet | Theory - 5Hrs |
| PRACTICAL | Adult Woman and Man diet planning – III | Practical – 6Hrs |
| | <p>Unit 13: Meal Planning for the Elderly</p> <ul style="list-style-type: none"> ▪ Changes associated with aging – physiological, hormonal, psycho – social ▪ Nutrition related problems among the elderly – Obesity, Under nutrition, Osteoporosis, Diabetes, CVD ▪ Nutritional requirement & RDA | Theory - 5Hrs |
| PRACTICAL | Elderly Woman and Man diet planning – II | Practical – 6Hrs |

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| <u>Block IV : Effective Utilization of Food Resources</u> | Unit 14 : Food Budgeting <ul style="list-style-type: none"> ▪ Plan and prepare healthy meals within budget ▪ Introduction of Low Cost Nutritious Recipes ▪ Novel foods with Food Fortification and supplementation ▪ Methods of cooking that involve low cost rich sources of nutrients ▪ Practical Examples – Have own kitchen garden | Theory - 4Hrs Practical – 4 Hrs |
| | Unit 15 : Food Storage and Safety | Theory – 3Hrs |
| | Unit 16 : Methods of Maximization of Nutritional Benefit <ul style="list-style-type: none"> ▪ Food fortification and Enrichment ▪ Objectives of Food fortification and Enrichment ▪ Criteria for Food Fortification, Limitations of Food Fortification and Example of Fortified Foods ▪ Fermentation – Advantages and Disadvantages ▪ Fermented Milk and Soya Products ▪ Germination ▪ Supplementation ▪ Introduction of novel foods to improve quality of foods. Refer to foods being developed by CFTRI. | Theory – 3Hrs |
| | Unit 17 : Food Labeling <ul style="list-style-type: none"> ▪ Identify Nutrition Related Components – Nutrition Facts, Serving Size, % Daily Value, Vitamins and Minerals and Daily Values. ▪ Nutrition Claim and Health Claim ▪ Importance of Nutrition Labeling ▪ Importance of Reading Nutrition Labels ▪ Understand the Nutrition Facts Panel, Serving Size, Calories – Amount per serving (From Carbohydrates, Fat and Protein), Nutrients – Vitamins and Minerals with Amount, Footnote on the bottom of Nutrition Facts Label, Relation of Daily Values with %DV and %Daily Value. ▪ Understand with help of a sample ▪ FSSAI role and responsibility | Theory -3Hrs Demo – 3 Hrs |
| | Unit 18 : Food Adulteration | Practical – 8Hrs |
| <u>Block V : Nutrition Related Disorders</u> | Unit 19 : Deficiency Diseases-I : SAM and Vitamin A & D | Theory – 6Hrs |
| | Unit 20 : Deficiency Diseases-II : Anemia, Iodine and other Deficiency Disorders like Vitamin E, and Zinc | Theory –6Hrs |
| | Unit 21 : Impact of Low birth weight | Theory – 4Hrs |
| | Unit 22 : Nutrition in Infection <ul style="list-style-type: none"> e. HIV | Theory – 4Hrs |

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| | f. Diarrhea | |
| | <p>Unit 22 : Lifestyle modification through dietary management and preventive approach :</p> <p>g. Obesity h. Cardio vascular diseases (CVD) i. Diabetes Mellitus j. Hypertension k. Hypothyroid l. PCOS</p> | Theory – 10Hrs |
| PRACTICAL | <p>Therapeutic diet planning – I</p> <p>g. Therapeutic Adaptations of the Normal diet h. Diet Planning –for weight management and life style disorders i.e. diabetes, hypertension, CVD, hypothyroid and PCOS i. Modifications in Consistency – Normal Diet, Mechanical Soft Diet, Fluid Diets (Clear Fluid and Full Fluid)</p> | Practical – 12Hrs |
| | <p>Unit 23 : Food Intolerance and Allergy</p> <ul style="list-style-type: none"> ▪ Definition, Symptoms, Common Food Allergens and Risk Factors for developing Food Allergy. ▪ Definition of Food Intolerance ▪ Types of Intolerance – Food Additives, Sulfites and Carbohydrates Intolerance. ▪ Diagnosis, Prevention and Dietary Management of Food Allergy and Food Intolerance. | <p>Theory – 4Hrs Practical – 6 Hrs</p> |

UNIT II: Community Nutrition and Health Education (200Hrs)

Theory – 138Hrs

Practical – 62Hrs

| Blocks: Knowledge | Learning outcome | Lesson Duration Plan – Theory/Demo/practical |
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| <u>Block I : Demography & Family Planning</u> | Unit 1 : Demographic Cycle <ul style="list-style-type: none"> ▪ World Population Trends ▪ Demographic trends in India ▪ Family Planning ▪ National Population Policy ▪ Contraceptive Methods | Theory – 5Hrs |
| | Unit 2 : Fertility related statistics <ul style="list-style-type: none"> ▪ Birth Rate ▪ General Fertility Rate ▪ Crude Birth Rate ▪ Total Fertility Rate ▪ Death Rate ▪ Infant Mortality Rate ▪ Maternal Mortality Rate | Theory – 2Hrs |
| <u>Block II : Environmental Health, Sanitation and safety</u> | Unit 3: Water <ul style="list-style-type: none"> ▪ Requirement, Uses, and Sources ▪ Purification of Water ▪ Storage ▪ Filtration ▪ Disinfection ▪ Water Conservation ▪ Prevention of wastage ▪ Water Harvesting | Theory – 5Hrs |
| | Unit 4 : AIR <ul style="list-style-type: none"> ▪ Air pollution ▪ Sources ▪ Meteorological factors ▪ Air pollutants ▪ Indoor air pollution ▪ Effect of air pollution ▪ Prevention and control of air | Theory – 5Hrs |

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| | <p>pollution</p> <ul style="list-style-type: none"> ▪ Disinfection of air | |
| | <p>Unit 5 : Ventilation</p> <ul style="list-style-type: none"> ▪ Standards of ventilation ▪ Types of ventilation | Theory – 3Hrs |
| | <p>Unit 6 : Light</p> <ul style="list-style-type: none"> ▪ Requirement of good light ▪ Measurement of light ▪ Natural lighting ▪ Artificial lighting ▪ Methods of artificial illumination | Theory – 6Hrs |
| | <p>Unit 7 : Noise</p> <ul style="list-style-type: none"> ▪ Effect of noise exposure ▪ Control of Noise | Theory – 3Hrs |
| | <p>Unit 8 : Radiation</p> <ul style="list-style-type: none"> ▪ Sources of radiation ▪ Exposure ▪ Biological effects of radiation ▪ Radiation protection | Theory – 3Hrs |
| | <p>Unit 9 : Disposal of wastes</p> <p>a. Solid wastes</p> <ul style="list-style-type: none"> ▪ Sources of refuse ▪ Storage ▪ Collection ▪ Methods of disposal <p>b. Excreta Disposal</p> <ul style="list-style-type: none"> ▪ Public Health importance ▪ Methods of excreta disposal | Theory – 6Hrs |
| | <p>Unit 10 : Mental Health</p> <ul style="list-style-type: none"> ▪ Types of mental illness | Theory – 8Hrs |

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| | <ul style="list-style-type: none"> ▪ Causes of mental ill health ▪ Preventive aspects ▪ Identification, prevention and quick medical reference of common mental illness <p>a. Depression b. Stress c. Anxiety d. Parkinson's disease e. Alzheimer's disease</p> | |
| <u>Block III : Food-borne Diseases, Food Poisoning and Intoxications</u> | <p>Unit 11 : Common Food-borne Diseases-I</p> <p>Unit 12 : Common Water-borne Diseases-II</p> <p>Unit 13 : Parasitic Infestations</p> <p>Unit 14 : Food Poisoning and Intoxications</p> | Theory – 8Hrs |
| <u>Block IV : Communicable diseases</u> | <p>Unit 15 : Measles, Tuberculosis and Poliomyelitis</p> <p>Unit 16 : Diphtheria, Tetanus and Malaria</p> | Theory – 8Hrs |
| <u>Block V : Public Health</u> | <p>Unit 17 : Primary Health Care (PHC):</p> <ul style="list-style-type: none"> ▪ Concept and Organization ▪ Current Status in India ▪ Delivery of Services ▪ Growth Chart | Theory – 8Hrs |
| <u>Block VI : Immunization</u> | <p>Unit 18 : Immunization</p> <ul style="list-style-type: none"> ▪ Immunization Schedule ▪ PHC and Immunization ▪ ANC and Immunization | Theory – 4 Hrs |
| <u>Block VII : National Health Programmes in India</u> | <p>Unit 19: Vector Borne Disease Control Programme</p> <ul style="list-style-type: none"> ▪ National Anti Malaria Programme ▪ National Tuberculosis Control Programme ▪ National Filaria Control Programme ▪ National AIDS Control Programme ▪ National Cancer Control Programme ▪ National Mental Health Programme | Theory – 16Hrs |

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| | <ul style="list-style-type: none"> ▪ National Diabetes Control Programme ▪ National Family Welfare Programme ▪ National Water Supply and Sanitation Programme ▪ National Rural Health Mission (NRHM) | |
| <u>Block VIII : National Nutrition and Health Programmes, Policy and Schemes</u> | <p>Unit 20: National Nutrition and Health Programmes</p> <ul style="list-style-type: none"> ▪ Integrated Child Development Service (ICDS) Scheme ▪ National Nutrition Anemia Control Programme ▪ National Prevention for Control of Blindness due to Vitamin A deficiency ▪ Vision 2020 : The right to sight ▪ Iodine Deficiency Disorder (IDD) Control Programme ▪ Universal Immunization Programme ▪ Reproductive and Child Health (RCH) Programme ▪ National Nutrition Policy ▪ National Food Security Bill ▪ Mid-Day Meal Programme | Theory – 16Hrs |
| | <p>Unit 21 : National Nutrition Governing Bodies / Associations / Schemes</p> <ul style="list-style-type: none"> ▪ Food Safety and Standards Authority of India (FSSAI) ▪ Janani Suraksha Yojana (JSY) ▪ NREGA ▪ Rashtriya Swasthya Bima Yojana (RSBY) | Theory – 6Hrs |
| <u>Block IX : Behavior Change Communication (BCC)</u> | <p>Unit 22: Communication</p> <ul style="list-style-type: none"> ▪ Communication Process ▪ Types of communication ▪ Health communication ▪ Functions of Health communication | Theory – 6 Hrs |
| | <p>Unit 23 : Health Education</p> <ul style="list-style-type: none"> ▪ Definition and Changing concepts ▪ Aims and Objectives | Theory – 8 Hrs |

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| | <ul style="list-style-type: none"> ▪ Role of healthcare providers ▪ Approach to Health Education ▪ Models of Health Education ▪ Content of Health Education ▪ Principles of Health Education | |
| | <p>Unit 24 : Communication Aids</p> <p>a. Audio Visual Aids</p> <p>b. Methods in Health Communication</p> <ul style="list-style-type: none"> ▪ Individual approach ▪ Group approach ▪ Mass approach <p>c. Planning and Management</p> <p>d. Administration and Organization</p> <p>e. Use of Social Media</p> <ul style="list-style-type: none"> ▪ TV ▪ Radio ▪ Internet – Facebook, Blogs and Twitter ▪ Mobile applications <p>Practical</p> <ul style="list-style-type: none"> ▪ Making AV Aids ▪ Creating Communication messages for community on Mass Awareness ▪ Focus Group Discussion | <p>Theory – 10Hrs</p> <p>Practical – 15Hrs</p> |
| <p><u>Block X :Implementation of Nutrition and Health Programme in the Community</u></p> | <p>Unit 25: Learning and Working with the Community</p> <ul style="list-style-type: none"> ▪ Community Nutrition and Health ▪ Factors Influencing Community Health and Nutrition <p>Practical</p> <ul style="list-style-type: none"> ▪ Planning and implementation of a selected nutrition health programme for the community through a role play / Puppet Show / Street Play | <p>Theory – 2Hrs</p> <p>Practical – 15hrs</p> |

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| <u>PRACTICAL</u> | Visit Planned | |
| | One day visit to a hospital kitchen | 8Hrs |
| | One day visit to a Primary Health Care Center | 8Hrs |
| | One day visit to a Aganwadi Center | 8 Hrs |
| | One day visit to a Mid Day Meal Kitchen | 8 Hrs |

Nutrition Lab Requirement

V. Cooking Appliance

| Cooking Appliance | Quantity (Nos.) |
|--|-----------------|
| 10. Microwave Oven | 1 |
| 11. All purpose oven – cooking range | 1 |
| 12. Electric Grill/ Sandwich maker | 2 |
| 13. Multipurpose - mixer, grinder, blender, juicer and chopper | 2 |
| 14. Electric whisk | 2 |
| 15. Gas lighter | 15 |
| 16. Refrigerator with freezer | 1 |
| 17. Gas Cylinder | 3-5 |
| 18. Cooking Gas | 15 |

VI. Equipment

| Equipment | Quantity Required |
|--|--|
| 1. Serving set (Full plate, quarter plate, Serving spoons, fork, knife, dessert spoon) | 3 Set |
| 2. Tea/ coffee set (tray, tea pot, milk jug, sugar bowl, strainer, tea spoon) | 3 |
| 3. Mixing bowls (small, medium, large) | 15 each |
| 4. Small multi - purpose bowls | 30 (2 per batch) |
| 5. Pressure cooker | 15 (medium size) |
| 6. Saucepan with covers | 15 small and 15 medium size |
| 8. Tawa and non –stick tawa | 15 |
| 9. Colander | 15 |
| 10. Chopping board (for veg and non –veg) | 15 for veg and 15 for non-veg |
| 11. Ovenproof dishes (bowls - small , medium and large) | 30 small bowls (2 per batch). 15 medium and 15 large with covers |
| 12. Baking tray (small, medium and big) | 2each |
| 13. Knife (palette, all purpose paring knife, bread knife, pastry knife, and peeler) | 15 |

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| 14.Spatula | 15 |
| 15.Sauce boat | 2 |
| 16.Moulds – Cake tin, muffin moulds or silicon moulds | 3 cake tin (different shape – round, square, rectangular), 3 muffin moulds and 3 silicon moulds |
| 17.Cutters – different shapes for biscuits | 5 different shapes per batch * 15 |
| 18.Flan ring | 3 |
| 19.Chinese wok | 3 |
| 20.Karahi with covers | 15 |
| 21.Serving spoons, tea spoon, dessert spoons, fork, table spoons, measuring spoons, ladle, wooden spoon and wooden scraper and measuring cups | 3 of each per batch * 15 and 15 measuring spoons and cups |
| 22. Potato Masher | 15 |
| 23.Hand whisk | 15 |
| 24.Food covers | 15 |
| 25.Measuring scale | 2 |
| 26.Kitchen cloth | 2 per batch *15 |
| 27.Glasses | 15-20 |
| 28.Tong | 15 |
| 29.Lemon/orange squeezer | 3 |
| 30.Flour dredger | 5 |
| 31.Ingredients tray | 15 |
| 32.Dustbins with cover | 15 |
| 33. Hand wash | 15 |
| 34. Liquid / Soap Dish washer | 15 |
| 35. Scotch brite scrubber | 15 |
| 36. Sink brush | 15 |

III. Research

| Equipment | Quantity (Nos.) |
|--|------------------------|
| 2 Reagents (for experiments with food) | |
| 3 Test tubes | 30 |
| 4 Test tube holder | 15 |
| 5 Wire Gauze | 15 |
| 6 Funnel | 15 |
| 7 Beaker | 30 |
| 8 Glass stirrer | 15 |
| 9 Litmus Paper (pH Paper) | 10 strips |
| 10 Thermometer | 15 |
| 11 Titration range equipment | 1 |
| Measuring apparatus | |
| 12 Measuring flask / cylinder | 10 |
| 13 Measuring scale | 1 |
| 14 Height meter | 1 |
| 15 Height measuring scale for infants | 1 |

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| 16 | Calipers | 1 |
| 17 | Tape measure | 3 |
| 18 | BCA machine | 1 |
| 19 | Weighing scale | 1 |
| 20 | Weighing scale for infants | 1 |
| 21 | Sphygmomanometer | 1 |
| 22 | Digital measuring BP Apparatus | 1 |
| 23 | First aid box | 1 |
| 24 | Computer | 1 |
| 25 | UPS | 1 |
| 26 | Printer | 1 |

VII. Basic requirement and dimensions of a work station in a Nutrition Lab for Practical's

Dimension of the counter- 5x7 feet (shared by two gas stoves i.e. 2 students work on either side)Space between two consecutive counters should be at least two and a half feet

Each counter also needs provision of a sink

VIII. Furniture

| Furniture | Numbers required |
|---------------------------|------------------|
| Chair | 30 |
| Table | 30 |
| Stool | 2 |
| Cupboard | 2 |
| e. For books | |
| f. For cooking equipments | |
| g. For Ingredients | |
| h. For appliances | |

Process of assessment

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| Written and Practical Exam |
| Third Party Assessment: – 1. NCVT 2. Private assessor 3. India Dietary Association (IDA) 4. RDAT |

Name : Certificate Course in Diet and Wellness Counseling
Code : NHE 603

Sector : Nutrition and Health Education

Qualification : Science Graduates (Biology Background either Class 12th or Biology Graduation)or B.Sc. Home Science

Duration :750Hrs

Faculty Qualification : Post Graduate (M.Sc. Foods and Nutrition) / BMS Doctor with Diploma in Nutrition)& a minimum 3 years of relevant work experience.

Batch Size : 25 Students

Programme overview : The Programme is a holistic package, which provides opportunities to the learner to gain knowledge about nutrition and dietetics. It also enables the learners to develop skills in communicating nutrition and dietary related information to the society.

The aim of the programme is to develop a knowledge base in the areas of nutrition and dietetics, promote awareness about concepts and principles and their application in nutrition and dietetics.

Career Benefits : This course helps to equip an individual to understand the basic concept of nutrition and dietetics and utilize it effectively for the individual and family needs. It also equips an individual with Medical, Physiotherapy or Paramedical background to supplement their specialization and nutritional inputs.

Placements : Health and Wellness Centers, Hospitals, Nursing Homes, Corporate Houses, Gym and Hotels

Objectives : To impart basic knowledge related to nutrition and health, as well as to train learners in imparting this knowledge to the community at large

| CourseCode | Course Name | Hours Credit |
|----------------|--------------|--------------|
| DHA Module- 01 | Nutrition | 43Hrs |
| DHA Module- 02 | Food Science | 139 Hrs |

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| DHA Module – 03 | Human Body and Physiology | 52 Hrs |
| DHA Module – 04 | Community Nutrition | 276Hrs |
| DHA Module – 05 | Nutrition for wellness and Prevention | 142Hrs |
| DHA Module – 06 | Alternative Therapies | 98Hrs |

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| Module 1: Nutrition (43 Hrs) | | Theory – 37Hrs Practical – 6 Hrs |
| Blocks : Knowledge | Learning Outcomes | Lesson Duration Plan - Theory/ Demo/ Practical |
| <u>Block 1 : Introduction to Nutrition</u> | Unit 1 : Organic & Inorganic aspects of nutrients | Theory - 1 Hr |
| <u>Block 2 : Macro Nutrients</u> | Unit 2 : Carbohydrates <ul style="list-style-type: none"> • Classification, Composition and Functions of Carbohydrates - Monosaccharide, Disaccharides and Polysaccharides • Fibers, their types and health effects • Health effect of Sugar & Alternative sweeteners • Glycemic Index • Carbohydrate Metabolism | Theory – 4 Hrs |
| | Unit 3: Protein and Amino Acid <ul style="list-style-type: none"> • Classification, Composition and Functions of proteins • Amino Acids – Essential and Non-Essential amino acids • Protein Metabolism • Food sources • Recommended Dietary Allowance • Protein sparing Evaluation of Protein quality • PEM, Kwashiorkor and Maras us • Protein Supplements | Theory – 4Hrs |
| | Unit 3: Lipids <ul style="list-style-type: none"> • Classification, Composition and Function • Fatty acids –SFA, MUFA and PUFA • Fat Metabolism • Food sources • Recommended Dietary Allowance • Trans fats and Hydrogenation | Theory – 4Hrs |
| <u>Block 3 : Energy Metabolism</u> | Unit 4: Energy <ul style="list-style-type: none"> • Components of Energy Expenditure - Basal Metabolic Rate, Physical Activity and Thermic effect of food. • Factors affecting BMR • Energy Measurement • Energy Calculations - Calculating | Theory – 4Hrs |

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| | individual Energy Requirement | |
| <u>Block 4 : Micronutrient</u> | Unit 5 : Vitamins <ul style="list-style-type: none"> • Functions of Fat Soluble Vitamins – A, D, E and K • Functions of Water soluble Vitamins – Thiamine, Riboflavin, Niacin, B6, B12, Folic acid and Biotin • Absorption, Transport and Storage • Food Sources • Recommended Dietary Allowance • Deficiency and Toxicity | Theory – 4Hrs |
| <u>Block 5 : Mineral and Trace Elements</u> | Unit 6 : Minerals <ul style="list-style-type: none"> • Functions of Minerals – Calcium, Phosphorus, Magnesium, Iron, Zinc, Copper, Iodine, Fluoride, Chromium and Selenium • Absorption, Transport, Storage and Excretion • Food Sources • Recommended Dietary Allowance • Deficiency and Toxicity | Theory – 4Hrs |
| <u>Block 6: Water, Electrolytes and Acid –Base Balance</u> | Unit 7: Water <ul style="list-style-type: none"> • Functions of Water • Sources • Water Balance • Requirement of water Unit 8: Electrolytes <ul style="list-style-type: none"> • Functions of Sodium, Chloride and Potassium • Absorption and Excretion • Food Sources • Recommended Dietary Allowance Unit 9 : Acid – Base Balance <ul style="list-style-type: none"> • Acid Generation and Regulation • Acid Base Disorders and Compensation | Theory – 6Hrs |
| <u>Block 7 : Antioxidants</u> | Unit 10: Antioxidants <ul style="list-style-type: none"> • Role of Antioxidants and Phytochemicals in prevention of diseases. | Theory – 2Hrs |
| <u>Practical</u> | | |
| <u>Block 8 :Identification of Different Nutrients</u> | Unit 11 : Nutritional Labeling <ul style="list-style-type: none"> • Identify Nutrition Related Components – Nutrition Facts, Serving Size, % Daily Value, Vitamins and Minerals and Daily Values. • Nutrition Claim and Health Claim | Theory – 2 Hrs Practical – 4 hrs |

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| | <p>Unit 12: Reading Nutrition Labels</p> <ul style="list-style-type: none">• Importance of Nutrition Labeling and reading Nutrition Labels• Understand the Nutrition Facts Panel, Serving Size, Calories – Amount per serving (From Carbohydrates, Fat and Protein), Nutrients – Vitamins and Minerals with Amount, Footnote on the bottom of Nutrition Facts Label, Relation of Daily Values with %DV and %Daily Value.• Understand with help of a sample | <p>Theory -2 Hrs Practical – 2 Hrs</p> |
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| Module 2: Food Science (139Hrs) | | Theory – 65Hrs Practical – 74Hrs |
| Blocks : Knowledge | Learning Outcomes | Lesson Duration Plan - Theory/ Demo/ Practical |
| <u>Block 1 : Introduction to Food science</u> | Unit 1 : Introduction to Food science <ul style="list-style-type: none"> • Food in relation to Health • Functions of Food, Food Groups and Nutritional Deficiency. • Cooking, Preliminary Preparations, Objective of cooking, Cooking Methods and Microwave cooking. | Theory – 3 Hrs |
| <u>Block 2 : Cereal and Cereal Products</u> | Unit 2 : Cereals <ul style="list-style-type: none"> • Structure, Composition and Nutritive Value of Cereal, Rice, Millets, Maize, Jowar, Ragi and Bajra. • Cereal Cookery – Effect of Moist and Dry Heat • Fermented and Unfermented – Cakes, White sauce, cooked rice, chapatti and breakfast cereals. | Theory – 4Hrs |
| <u>Block 3 : Fruits & Vegetables</u> | Unit 3: Fruits and Vegetables <ul style="list-style-type: none"> • Classification, Composition and Nutritive Value of Vegetables • Pigments, Organic Acids, Enzymes and Flavour Compounds of Fruits and Vegetables. • Selection of Fruits and Vegetables • Vegetable Cookery – changes, loss of nutrients during cooking and effect of cooking on pigments. • Storage of Vegetables • Classification, Composition and Nutritive Value of Fruits • Nutritive value of processed fruits like juices, canned food and others • Post harvest Changes and Storage • Enzymatic and Ascorbic Acid Browning • Traditional and modern medicinal value of fruits and vegetables. | Theory – 8Hrs |
| <u>Block 4 : Fats & Oil</u> | Unit 4: Fats & Oil <ul style="list-style-type: none"> • Nutritional Importance, Composition of Fats and Oils • Processing and Refining of Fats • Specific Fats, Emulsions, Rancidity and Smoke Point of Fats and Oils. • Role of Fat/Oil in Cookery • Trans Fat and common side effects | Theory – 4Hrs |
| <u>Block 5 : Pulses</u> | Unit 5:Pulses <ul style="list-style-type: none"> • Composition and Nutritive Value of Pulses. • Processing, Storage and Infestation. | Theory – 4Hrs |

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| | <ul style="list-style-type: none"> • Toxic Constituents of Pulses. • Pulse Cookery • Medicinal Values of Pulses • Pulses as vegetarian source of proteins • Different pulses and their nutritional advantages | |
| <u>Block 6 : Milk and Milk Products</u> | Unit 6 : Milk and Milk Products <ul style="list-style-type: none"> • Composition, Physical Properties and Nutritive Value of Milk and Milk Products • Effect of Heat, Acid, Enzymes and Phenolic Compounds and Salts • Microorganisms and Milk • Milk Processing, Milk Products and Milk Substitutes. • Safe way to store mil and milk products • Adulteration of Milk • Dairy fat – Home made healthy recipes by reduction of dairy fats | Theory – 4Hrs Practical – 4 Hrs |
| <u>Block 7 : Poultry, Fish and Meat</u> | Unit 7 : Poultry <ul style="list-style-type: none"> • Structure, Composition, Pigments and Nutritive Value of Eggs • Quality of Eggs • Egg Cookery and Effect of Heat • Buying and Handling of Eggs • Preservation of Eggs • Recipes: Soft and Hard Cooked, Poached, Scrambled, Fried Eggs, Custards, Egg white Foams and Omelets and Soufflé. • Role of Egg in Cookery • Classification, Composition and Nutritive Value of Poultry • Processing, Preservation and storage of Poultry. • Healthy and Unhealthy methods of cooking Unit 8 : Meat <ul style="list-style-type: none"> • Structure, Composition and Nutritive Value of Meat • Post Mortem Changes – Ageing, Tenderizing and Curing of Meat • Cuts and Grades of Meat • Meat Cookery and Changes during Cooking. • Healthy and Unhealthy methods of cooking Unit 9: Fish <ul style="list-style-type: none"> • Classification, Composition and Nutritive Value of Fish • Selection of Fish • Fish Cookery and Changes • Fish Spoilage • Preservation and Storage | Theory – 4Hrs Practical – 4Hrs Theory – 3Hrs Practical – 4 Hrs Theory – 2 Hrs Practical – 4 Hrs |

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| <u>Block 8:Food Adulteration</u> | Unit 10: Food Adulteration <ul style="list-style-type: none"> • Types of Adulterants • Intentional Adulterants • Metallic Contamination • Incidental Adulterants • Food Laws and Standards | Theory – 3Hrs Practical – 4 Hrs |
| <u>Block 9 : Food Preservation</u> | Unit 11: Food Preservation <ul style="list-style-type: none"> • Food Spoilage and how to check for food spoilage at home and in packaged foods • Methods of Food Preservation – Low Temperature, High Temperature, Preservatives, Osmotic Pressure and Dehydration. • Home based food preservation | Theory – 3Hrs Practical – 4 Hrs |
| <u>Block 10 : Food Processing</u> | Unit 12: Food Processing - Introduction <ul style="list-style-type: none"> • Principle of Food Processing • Freezing – slow, quick, dehydrate freezing and its effect on nutritive value • High Temperature – Pasteurization, Canning and its effect on nutritive value • Use of Preservatives and its effect on nutritive value • Dehydration – Freeze, sun, use of mechanical driers, spray and drying by smoking and its effect on nutritive value. • Trends in Food Processing in terms of health, hygiene and efficiency. | Theory – 3Hrs Practical – 4 Hrs |
| <u>Block 11 : Food Additives</u> | Unit 13: Food Additives <ul style="list-style-type: none"> • Principle for Using Food Additives • Types of Food Additives – Natural and Artificial with examples as per category • Safety and Regulation of Food Additives • Non-Permitted Synthetic Food Additives and its effect on health | Theory – 3Hrs |
| <u>Block 12 : Methods of Improving Nutritional Quality of Foods</u> | Unit 14: Methods of Improving Nutritional Quality of Foods <ul style="list-style-type: none"> • Food fortification and Enrichment • Objectives of Food fortification and Enrichment • Criteria for Food Fortification, Limitations of Food Fortification and Example of Fortified Foods • Fermentation – Advantages and Disadvantages • Fermented Milk and Soya Products • Germination • Supplementation | Theory – 3Hrs Practical – 4 Hrs |

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| | <ul style="list-style-type: none"> • Introduction of novel foods to improve quality of foods. Refer to foods being developed by CFTRI. • Practical – demonstration of healthy recipes enhancing the nutritive value of common foods <p>Unit 15 : An Introduction to genetically modified (GM) Food items & Organic Foods</p> <ul style="list-style-type: none"> • Concept and growing popularity of GM Food Production and Organic Foods • Advantages and disadvantages of GM and Organic Foods • Examples of Foods being produced by these methods • Food Processing using Genetically Engineered food Products • FAO/WHO Codex guidelines exist for risk analysis of GM food <p>Unit 16 :Dietary Supplements and Functional foods (pre & probiotics)</p> <ul style="list-style-type: none"> • Types of Dietary Supplements with examples • Rules for Regulation of Supplements by FDA • Bioavailability of Dietary Supplements • Guidelines for using Dietary Supplements • Functional foods with examples and apparent health benefits • Prebiotic and Probiotic benefits | <p>Theory – 2Hrs</p> <p>Theory – 3Hrs</p> |
| Practical | | |
| <u>Block 13 : Common Terms of Cooking</u> | <p>Unit 17: Common Terms of Cooking</p> <ul style="list-style-type: none"> • Basic Cooking Terminologies • Healthy Cooking Terminologies | Theory -2Hr |
| <u>Block 14: Different cuisines- Regional/Cultural differences</u> | <p>Unit 18 : Different cuisines - Regional/Cultural differences</p> <ul style="list-style-type: none"> • Types of cuisines – Indian, Continental, Chinese, Italian, Thai and Lebanese • Regional and Socio - Cultural beliefs and difference • Acceptability of Different cuisines • How to make regional cuisines in a healthy way • Planning a nutritious healthy plan on a budget | Practical – 12hrs |
| <u>Block 15 : Weights & Measures</u> | <p>Unit 19: Weights & Measures</p> <ul style="list-style-type: none"> • Importance of Weights and Measures in cooking • Equipment for Measuring Liquids and Solids • How to measure Liquids, Dry ingredients and solid fat. | Theory and Demo – 2 Hrs |

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| | <ul style="list-style-type: none"> • Equivalents to Common Household measures, Liquid Measures, Weight , Oven Temperatures • Weights and Equivalents Measures of Common Foodstuffs <p>Unit 20 :Standardization</p> <ul style="list-style-type: none"> • Importance of Standardization • Standardization Principle and Methods | Theory and Demo – 2 Hrs |
| <u>Block 16: Market Survey of different foods</u> | <p>Unit 21 :Market Survey of different foods</p> <ul style="list-style-type: none"> • Market Survey – Tool for data collection • Importance, Primary and Secondary Source of Information • Process of conducting a Market Survey • Efficiency of Market Survey • Advantages and Disadvantages of Conducting Market Survey • Plan a visit to collect food from the five food groups • Selection of different kind of healthy foods | Three day visit 6Hrs per day Practical – 18Hrs |
| <u>Block 17: Methods of preparation & cooking</u> | <p>Unit 22: Methods of preparation & cooking</p> <ul style="list-style-type: none"> • Preparation Terms: Cleaning, Peeling, Cutting, Grating, Sieving , Soaking, Processing, Coating, Blanching, Marinating, Sprouting, Fermentation, Grinding, Drying and Roasting • Moist method of cooking – Boiling, Simmering, Poaching, Stewing, Blanching, Steaming and Pressure cooking • Dry method of cooking – Roasting, Grilling, Toasting, Baking and Frying. • Methods of healthy cooking practice | Theory – 3 Hrs Practical – 12 Hrs |

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| <p><u>Block 3 : Excretory System and Its Disorders</u></p> | <p>Unit 4: Excretory System</p> <ul style="list-style-type: none"> • Physiology and Functions of Kidney • Role of Kidney in excreting waste from body <p>Unit 5 : Disorders of Excretory System</p> <ul style="list-style-type: none"> • Glomerular Diseases – Nephrotic and Nephritic Syndrome • Acute and Chronic Renal Failure • Kidney Stones – Calcium Oxalate, Calcium Phosphate, Uric Acid, Cystinine and Struvite • End Stage Renal Disease – Transplantation and Dialysis | <p>Theory – 2 Hrs</p> <p>Theory – 3Hrs</p> |
| <p><u>Block 4 : Integumentary System</u></p> | <p>Unit 6: Integumentary System</p> <ul style="list-style-type: none"> • Anatomy and Function of Human Skin, Hair, Nails, Glands, and Nerves • Components and Role of Skin as a Homeostatic organ. • Care for Skin, Hair and Nails • Disorders and Treatment of Skin, Hair and Nails. | <p>Theory – 3Hrs</p> |
| <p><u>Block 5 : Musculoskeletal System</u></p> | <p>Unit 7: Musculoskeletal System</p> <ul style="list-style-type: none"> • Anatomy and Diagrammatic Position of Muscles • Axial and Appendicular skeleton • Structure of Mammalian Bone and Types of Bone • Components of Bone with example | <p>Theory – 3Hrs</p> |
| <p><u>Block 6 : Hormonal System</u></p> | <p>Unit 8 : Hormonal System</p> <ul style="list-style-type: none"> • Functioning of Hormonal and Nervous System • Hypothalamus, Homeostasis and Hormone • Difference between Hormonal and Nervous control • Exocrine and Endocrine Gland • Characteristics and Functions of Hormone • Structure, Location and Function of Pituitary Gland, Thyroid Gland, Adrenal Gland, Suprarenal Gland, Parathyroid Gland, Pancreas, Thymus, Testes and Ovaries. • Effect of Hypo secretion and Hyper secretion of Pituitary Gland, Thyroid Gland, Adrenal Gland, Suprarenal Gland, Parathyroid Gland and Pancreas | <p>Theory – 6 Hrs</p> |

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| <p><u>Block 7 : Nervous System and sense organs</u></p> | <p>Unit 9: Nervous System and Sense Organs</p> <ul style="list-style-type: none"> • Functions of Nervous System • Terms like Nerve, Stimulus, Response, Excitability and Synapse • Structure of Neurone and Function of its Features, Difference between Axon and Dendrite • Types of Neurones – their location, features and functions • Mechanism in the transfer of nerve impulse • Nervous System, Components of Central, Peripheral and Autonomic Nervous System • Structure of Human brain and functions Cerebrum, Cerebellum and Spinal Cord. | <p>Theory – 6 Hrs</p> |
| <p><u>Block 8 : Cardio Vascular System</u></p> | <p>Unit 10: Cardio Vascular System</p> <ul style="list-style-type: none"> • Constituents and Composition of Blood • Blood cells, and their functions • Functions of Blood, • Process of Blood Clotting • ABO Blood Group System and Rh Factor • Structure of the heart, Chambers, Valves, Blood Flow Process • Blood vessels, • Cardiac Cycle • Disorders of blood and cardiovascular system vessels | <p>Theory – 6 Hrs</p> |
| <p><u>Block 9 : Lymphatic System</u></p> | <p>Unit 11: Lymphatic System</p> <ul style="list-style-type: none"> • Components of the Lymphatic System • Functions of Lymphatic System • Lifecycle of Lymphocytes • Lymph Organs – Nodes and Glands and their Functions • Lymph Disorder - Lymphoma | <p>Theory – 4 Hrs</p> |
| <p><u>Block 10 : Respiratory System</u></p> | <p>Unit 12: Respiratory System</p> <ul style="list-style-type: none"> • Types of Respiration – Aerobic and Anaerobic Respiration • Parts of the Respiratory Tract and their Functions –nose, pharynx, larynx, trachea, alveoli and lungs • Mechanism of Inspiration and Expiration • Common Respiratory Disease – Asthma, Bronchitis, Pneumonia and Tuberculosis. | <p>Theory – 4 Hrs</p> |

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| <u>Block 11 : Reproductive System</u> | Unit 13: Reproductive System <ul style="list-style-type: none"> • Structure of Male and Female Reproductive System • Function of Parts of Male and Female Reproductive System • Process of Sperm and Ovum Formation • Process of Menstruation and Fertilization | Theory – 4 Hrs |

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| | <p>a) Diet recall & assessment b) How is physical activity assessed c) Use of observation sheet Practical – Diet Planning and calculation</p> <p>5) <u>Putting assessment Components together</u> a) What is health risk factor analysis? b) Forms of Nutritional Assessment : Nutritional surveys, Nutritional Surveillance and Nutritional Screening c) Advantages and Disadvantages of each method</p> | <p>Theory – 8Hrs Practical – 10Hrs</p> <p>Theory – 6Hrs Practical –6Hrs</p> |
| <u>Block 3 :Approaches in Nutrition Education</u> | <p>Unit 4: <u>Traditional and Contemporary</u></p> <ul style="list-style-type: none"> • Definition and Scope of Nutrition Education • Who needs Nutrition Education • Fundamentals of Nutrition Education Programs in India • Methods of Communication – flannel graph, flip book demonstration • Problems in Nutrition Education • Evaluation and Follow up • Purpose and objective of Evaluation | <p>Theory – 6Hrs</p> |
| <u>Block 4 : Counseling skills</u> | <p>Unit 5: <u>Counseling skills</u></p> <ul style="list-style-type: none"> • Meaning, Nature, Elements, Phases of Counseling Techniques • Characteristic of an Effective Counselor • Concepts and Categories of Counseling Techniques. • Soft skills • Grooming and presentation of the counselor <p>Practical</p> <ul style="list-style-type: none"> • Role play and Group discussion to enhance counseling skills | <p>Theory – 12Hrs Practical – 12 Hrs</p> |
| <u>Block 5 : Nutrition & Health Programmes/ Polices</u> | <p>Unit 6: <u>National Health Programmes</u></p> <ul style="list-style-type: none"> ▪ National Anti Malaria Programme ▪ National Tuberculosis Control Programme ▪ National Filaria Control Programme ▪ National AIDS Control Programme ▪ National Cancer Control Programme ▪ National Mental Health Programme ▪ National Diabetes Control Programme ▪ National Family Welfare Programme ▪ National Water Supply and Sanitation Programme ▪ National Rural Health Mission (NRHM) | <p>Theory – 16Hrs</p> |

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| | <ul style="list-style-type: none"> ▪ Integrated Child Development Service (ICDS) Scheme ▪ National Nutrition Anemia Control Programme ▪ National Prevention for Control of Blindness due to Vitamin A deficiency ▪ Vision 2020 : The right to sight ▪ Iodine Deficiency Disorder (IDD) Control Programme ▪ Universal Immunization Programme ▪ Reproductive and Child Health (RCH) Programme ▪ National Nutrition Policy ▪ National Food Security Bill ▪ Mid-Day Meal Programme | |
| | <p>Unit 7 : National Nutrition Governing Bodies / Associations / Schemes</p> <ul style="list-style-type: none"> ▪ Food Safety and Standards Authority of India (FSSAI) ▪ JananiSurakshaYojana (JSY) ▪ NREGA ▪ RashtriyaSwasthyaBimaYojana (RSBY) | Theory – 6 Hrs |
| <u>Block 6 : Public Health</u> | <p>Unit 8 : Primary Health Care (PHC):</p> <ul style="list-style-type: none"> ▪ Concept and Organization ▪ Current Status in India ▪ Delivery of Services ▪ Functioning ▪ Growth Chart | Theory – 8 Hrs |
| <u>Block 7 : Immunization</u> | <p>Unit 9 : Immunization</p> <ul style="list-style-type: none"> ▪ Immunization Schedule ▪ PHC and Immunization ▪ ANC and Immunization | Theory – 4 Hrs |

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| <u>Block 8: Diet Planning</u> | <p>Unit 10:Diet Planning</p> <ul style="list-style-type: none"> • Diet Planning for different economic groups based on their nutritional needs <ul style="list-style-type: none"> a. Adult Male and Female b. Children c. Adolescents d. Elderly Male and Female e. Pregnant and lactating Mothers • Demonstration on healthy practices | <p>Theory – 2 Hrs</p> <p>Practical – 12 Hrs</p> |
| <u>Block 9 : Healthy cooking</u> | <p>Unit 11 : Creative Healthy Cooking</p> <ul style="list-style-type: none"> • Plan and prepare healthy meals with National and International cooking practices • Introduction of Nutritious Recipes • Novel foods with Food Fortification and supplementation • Methods of cooking that involve rich sources of nutrients <p>Practical</p> <ul style="list-style-type: none"> • Demonstration of national and international nutritious recipes | <p>Theory – 2 Hrs</p> <p>Practical – 24Hrs</p> |
| <u>Block 10 : Behavior Change Communication (BCC)</u> | <p>Unit 12: Communication</p> <ul style="list-style-type: none"> ▪ Communication Process ▪ Types of communication ▪ Health communication ▪ Functions of Health communication | <p>Theory – 6 Hrs</p> |
| | <p>Unit 13 : Health Education</p> <ul style="list-style-type: none"> ▪ Definition and Changing concepts ▪ Aims and Objectives ▪ Role of healthcare providers ▪ Approach to Health Education ▪ Models of Health Education ▪ Content of Health Education ▪ Principles of Health Education | <p>Theory – 8 Hrs</p> |
| | <p>Unit 14 : Communication Aids</p> <ul style="list-style-type: none"> f. Audio Visual Aids g. Methods in Health Communication <ul style="list-style-type: none"> ▪ Individual approach | <p>Theory – 10 Hrs</p> |

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| | <ul style="list-style-type: none"> ▪ Group approach ▪ Mass approach <p>h. Planning and Management i. Administration and Organization j. Use of Social Media</p> <ul style="list-style-type: none"> ▪ TV ▪ Radio ▪ Internet – Facebook, Blogs and Twitter ▪ Mobile applications <p>Practical</p> <ul style="list-style-type: none"> ▪ Making AV Aids ▪ Creating Communication messages for community on Mass Awareness ▪ Focus Group Discussion | Practical – 18 Hrs |
| <u>Block 11 : Implementation of Nutrition and Health Programme in the Community</u> | <p>Unit 15: Learning and Working with the Community</p> <ul style="list-style-type: none"> ▪ Community Nutrition and Health ▪ Factors Influencing Community Health and Nutrition <p>Practical</p> <ul style="list-style-type: none"> ▪ Planning and implementation of a selected nutrition health programme for the community through a role play / Puppet Show / Street Play | Theory – 2 Hrs Practical – 18 hrs |
| <u>PRACTICAL</u> | Visit Planned | |
| | One day visit to a hospital kitchen | 8Hrs |
| | One day visit to a Primary Health Care Center | 8Hrs |
| | One day visit to a Aganwadi Center | 8 Hrs |
| | One day visit to a Mid Day Meal Kitchen | 8 Hrs |

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| Module 5: Nutrition for wellness and Prevention(142Hrs) | | Theory – 50Hrs Practical – 92Hrs |
| Blocks : Knowledge | Learning Outcomes | Lesson Duration Plan - Theory/ Demo/ Practical |
| Theory | | |
| <u>Block 1 : Therapeutic Modification of Normal Diets</u> | Unit 1 : Therapeutic Modification to Normal Diets <ul style="list-style-type: none"> • Definition of Diet Therapy • Therapeutic Adaptations of the Normal diet • Modifications in Consistency – Normal Diet, Mechanical Soft Diet, Fluid Diets (Clear Fluid and Full Fluid) • Diet Planning – Fluid, Semi Solid and Solid Diet | Theory – 4Hrs Practical –6 Hrs |
| <u>Block 2 : Nutrition in Gastro-Intestinal Disorders</u> | Unit 2: <u>Gastro- Intestinal Disorders</u> <ul style="list-style-type: none"> • Etiology, Causes, reference protocol for treatment and Dietary Management of Diarrhoea – Acute and Chronic • Formula for Preparing Oral Rehydration Salts • Etiology, Causes, Reference protocol for treatment and Dietary Management of Constipation • Etiology, Causes, Clinical Symptoms, Reference protocol for treatment and Dietary Management of Peptic Ulcers • Etiology, Causes of Malabsorption – Gluten Enteropathy, and Lactose Intolerance • Diet Planning | Theory – 4Hrs Practical –6 Hrs |
| <u>Block 3 : Nutrition in Diabetes Mellitus</u> | Unit 3:Diabetes Mellitus <ul style="list-style-type: none"> • Diabetes Mellitus – Classification, Etiology and Chemical Pathology. • Dietary Management of Diabetes Mellitus (Adult onset Type 2) • Complications of Diabetes Mellitus • Reference protocol for treatment • Diet Planning | Theory – 4Hrs Practical –6Hrs |
| <u>Block 4 : Nutrition in</u> | Unit 4:Hypothyroidism and | Theory – 4Hrs |

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| <u>Hypothyroidism and Hyperthyroidism</u> | Hyperthyroidism <ul style="list-style-type: none"> • Basic Introduction • Reference protocol for treatment • Dietary Management: foods to avoid and food to restrict • Thyroid And Exercise • Diet Planning | Practical –6Hrs |
| <u>Block 5 : Nutrition in PMS & Menopause</u> | Unit 5: PMS & Menopause <ul style="list-style-type: none"> • Etiology and Causes of PMS and Menopause • Symptoms and Diagnosis of PMS and Menopause • Reference protocol for treatment • Dietary Management • Diet Planning | Theory – 4Hrs Practical –6Hrs |
| <u>Block 6 : Nutrition Cardiac Disorders – High Cholesterol</u> | Unit 6 : Cardiac Disorders <ul style="list-style-type: none"> • Etiology, Causes, Treatment and Dietary Management of Atherosclerosis • Reference protocol for treatment • Dietary Management of Hyperlipidemia/ Hyperlipoproteinemia, Myocardial Infarction and Congestive Heart Failure • Diet Planning | Theory – 4Hrs Practical –6Hrs |
| | Unit 7: Hypertension <ul style="list-style-type: none"> • WHO Classification of Blood Pressure • Etiology, Symptoms, Treatment and Dietary Management • Diet Planning | Theory – 2 Hrs Practical –4 Hrs |
| <u>Block 7: Nutrition in Febrile Disorders</u> | Unit 8: Febrile Disorders <ul style="list-style-type: none"> • Classification of Fevers • Metabolism in Fevers • Body Changes, Treatment and Dietary Management of Typhoid Fever (Acute Fever) • Body Changes and Dietary Management of Tuberculosis Fever (Chronic Fever) • Reference protocol for treatment • Diet Planning | Theory – 4 Hrs Practical –6Hrs |

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| <p><u>Block 8 : Food for Healthy skin & Hair, Food for Night Shift Worker, Foods To improve memory</u></p> | <p>Unit 9:Healthy Skin & Hair</p> <ul style="list-style-type: none"> • Causes, Symptoms and Diagnosis of Skin and Hair Problems. • Dietary Management of Hair and Skin • Diet Planning <p>Unit 10: Night Shift Worker</p> <ul style="list-style-type: none"> • Causes, Signs and Health Consequences of Night Shift Worker • Treatment(Prescribed Sleep, Bright Light, Melatonin and Medications to Promote Alertness) and Dietary Management of Night Shift Work Disorder • Diet Planning <p>Unit 11 : Foods To improve memory and manage stress level</p> <ul style="list-style-type: none"> • Memory Function Factors • Memory Improvement Strategies – Cognitive Training, Psychopharmacology, Dietary Management, Stress Management, Exercise and Mental Exercise. • Diet Planning | <p>Theory – 2 Hrs Practical –6Hrs</p> <p>Theory – 2 Hrs Practical –6Hrs</p> <p>Theory – 2 Hrs Practical –4 Hrs</p> |
| <p><u>Block 9 : Common Food Allergy and Intolerance</u></p> | <p>Unit 12 : Food Allergy and Intolerance</p> <ul style="list-style-type: none"> • Definition, Symptoms, Common Food Allergens and Risk Factors for developing Food Allergy. • Definition of Food Intolerance • Types of Intolerance – Food Additives, Sulfites and Carbohydrates Intolerance. • Diagnosis and Dietary Management of Food Allergy and Food Intolerance. | <p>Theory – 2 Hrs Practical –4 Hrs</p> |
| <p><u>Block 10 : Weight Management</u></p> | <p>Unit 13: Weight Management</p> <ul style="list-style-type: none"> • Definition of Terms: Overweight and Obesity • Assessment, Hazards, Etiology of Obesity • Metabolism, Treatment and Dietary Management of Obesity • Etiology, Health Hazards, Treatment and dietary Management of Underweight • Extreme Approaches used for Weight Loss. • Role of passive and active activity in weight management • Impact of diet counseling | <p>Theory – 10Hrs Practical –12Hrs</p> |

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| Block 11 : Planning of Therapeutic Diets | Unit 14: Planning of Therapeutic Diets <ul style="list-style-type: none"> • Preventive and Wellness Diets for obesity, high blood pressure, diabetes • Practical demonstration of Portion size prepared for medical condition. | Theory – 2 Hrs Practical –6Hrs |
| Practical | A visit planned to a wellness center | Practical – 8 Hrs |

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| Module 6: Alternative Therapies (98Hrs) | | Theory – 40Hrs Practical – 58Hrs |
| Blocks : Knowledge | Learning Outcomes | Lesson Duration Plan - Theory/ Demo/ Practical |
| <u>Theory</u> | | |
| <u>Block 1 : Ayurveda</u> | Unit 1 : Ayurveda <ul style="list-style-type: none"> • Definition, Origin, Scope and Objective of Ayurveda • The Five Elements and their attributes | Theory - 2 Hrs |
| <u>Block 2 : Tridosha</u> | Unit 2: Tridosha <ul style="list-style-type: none"> • The three Doshas – Vata, Kapha and Pitta and their effects in our body Unit 3: Saptadhatus <ul style="list-style-type: none"> • Saptadhatus and their relation with Doshas Unit 4: Prakriti <ul style="list-style-type: none"> • Determination of Prakriti • Benefits of knowing Prakriti | Theory - 6Hrs |
| <u>Block 2 : Ayurvedic Concept of Disease</u> | Unit 5 : Ayurvedic Treatment Principle <ul style="list-style-type: none"> • Factors responsible for increasing Vata, Kapha and Pitta • Treatment Principle and Panchkarma | Theory - 3 Hrs |
| <u>Block 3 : Ayurvedic Nutrition</u> | Unit 7: Ayurvedic Nutrition <ul style="list-style-type: none"> • Process of Digestion, the six Rasa, Vipaak, Virya, Prabhav and Virudharaahaara • Types of Virudharaahaara • Recommendation of Ayurvedic Food Combinations • Incompatible Foods Combinations • Anupana | Theory - 3 Hrs |

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| <u>Block 4 : Accupressure</u> | <p>Unit 8: Acupressure</p> <ul style="list-style-type: none"> • History of Acupressure • Benefits of Acupressure • 12 Meridians used in the treatment <p>Unit 9: Points used in Acupressure</p> <ul style="list-style-type: none"> • Treatment through the 12 Meridians with help of diagrams | <p>Theory 2 Hrs</p> <p>Theory - 2 Hrs Demo *- 2 Hrs</p> |
| <u>Block 5 : Introduction to Yoga</u> | <p>Unit 10 : Introduction to Yoga</p> <ul style="list-style-type: none"> • Meaning and Origin of Yoga <p>Unit 11 : Ash tang Yoga</p> <ul style="list-style-type: none"> • Guidelines for Yamas and Niyamas • Asanas, Yogasana, Pranayama and Prathyahara • Benefits of Yamas, Niyamas, Asanas, Yogasana, Pranayama, Prathyahara • Dharana, Dhyana and Samadhi | <p>Theory - 2 Hrs</p> <p>Theory 2 Hrs Practical* – 6Hrs</p> |
| <u>Block 6 : Cleaning and Yoga</u> | <p>Unit 12: Detoxification and Yoga</p> <ul style="list-style-type: none"> • Detoxification and Rejuvenation • Benefits of Yogic Techniques in Cleansing – Nasal Abdomen and Colon | <p>Theory - 2 Hrs Demo and Practical*- 10Hrs</p> |
| <u>Block 8 : Massages and Body Therapies</u> | <p>Unit 14 : Massages and Body Therapies</p> <ul style="list-style-type: none"> • Definition and History of Massage <p>Unit 15: Massage and Health</p> <ul style="list-style-type: none"> • Principle and Benefits of Massage Therapy • Physiological and Chemical changes within the body <p>Unit 16:Types of Massage</p> <ul style="list-style-type: none"> • Relaxation, Remedial, Sports, Aromatherapy, Reflexology and Oriental Massage • Equipment required for Massage <p>Unit 17 : Preparation for Massage Therapy</p> <ul style="list-style-type: none"> • Room, Ambience, Therapist and Preparation of client <p>Unit 18: Massage Therapy – Safety</p> <ul style="list-style-type: none"> • Precautions and contraindications | <p>Theory - 2 Hrs Practical Demo* – 5 Hrs</p> <p>Theory - 2 Hrs Practical Demo* – 5 Hrs</p> <p>Theory - 2 Hrs Practical Demo* – 5 Hrs</p> <p>Practical Demo* – 5 Hrs</p> <p>Theory - 2 Hrs</p> |

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| <u>Block 9 : Swedish Massage</u> | Unit 19 : Swedish Massage <ul style="list-style-type: none"> • Purpose and Medium used for Swedish Massage • Principle of Swedish Massage and Lymphatic drainage • Basic Techniques – Effleurage, Petrissage, Friction, Tapotement and Vibration Unit 20: Body Therapy and Tucks Using Swedish Massage <ul style="list-style-type: none"> • Appliances, Anti-Cellulite oil and Thermo Herb Pack and their uses • Procedure, Process and Time Duration | Theory - 2 Hrs Practical Demo* – 5 Hrs Theory - 2 Hrs Practical Demo* – 5 Hrs |
| <u>Block 10 : Thai Massage</u> | Unit 21: Thai Massage <ul style="list-style-type: none"> • Holistic Benefits of Thai Massage • Procedure, Precautions and Contraindications of Thai Massage | Theory - 2 Hrs Practical Demo *– 5 Hrs |
| <u>Block 11 : Aromatherapy Massage</u> | Unit 22: Aromatherapy Massage <ul style="list-style-type: none"> • History of the Massage and Role of Carrier Oils • Route of Administration - Oral, Trans-dermal and Inhalation • Storage of Essential Oils • Benefits of Aromatherapy Massage • Preparation of Client, Procedure and Precautions to be taken during treatment | Theory - 2 Hrs Practical Demo* – 5 Hrs |

Note : * All practical demo regarding massage therapy and yoga asana can be demonstrated through a practical i.e. hands on experience or also through audio visual aids in terms of a video instruction.

Nutrition Lab Requirement

IX. Appliances

| Cooking Appliance | Quantity (Nos.) |
|--|------------------------|
| 19. Microwave Oven | 1 |
| 20. All purpose oven – cooking range | 1 |
| 21. Electric Grill/ Sandwich maker | 2 |
| 22. Multipurpose - mixer, grinder, blender, juicer and chopper | 2 |
| 23. Electric whisk | 2 |

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| 24. Gas lighter | 15 |
| 25. Refrigerator with freezer | 1 |
| 26. Gas Cylinder | 3-5 |
| 27. Cooking Gas | 15 |

X. Equipment

| Equipment | Quantity Required |
|---|---|
| 1. Serving set (Full plate, quarter plate, Serving spoons, fork, knife, dessert spoon) | 3 Set |
| 2.Tea/ coffee set (tray, tea pot, milk jug, sugar bowl, strainer, tea spoon) | 3 |
| 3.Mixing bowls (small, medium, large) | 15 each |
| 4.Small multi - purpose bowls | 30 (2 per batch) |
| 5.Pressure cooker | 15 (medium size) |
| 6.Saucepan with covers | 15 small and 15 medium size |
| 8.Tawa and non –stick tawa | 15 |
| 9.Colander | 15 |
| 10.Chopping board (for veg and non –veg) | 15 for veg and 15 for non-veg |
| 11.Ovenproof dishes (bowls - small , medium and large) | 30 small bowls (2 per batch). 15 medium and 15 large with covers |
| 12.Baking tray (small, medium and big) | 2each |
| 13.Knife (palette, all purpose paring knife, bread knife, pastry knife, and peeler) | 15 |
| 14.Spatula | 15 |
| 15.Sauce boat | 2 |
| 16.Moulds – Cake tin, muffin moulds or silicon moulds | 3 cake tin (different shape – round, square, rectangular), 3 muffin moulds and 3 silicon moulds |
| 17.Cutters – different shapes for biscuits | 5 different shapes per batch * 15 |
| 18.Flan ring | 3 |
| 19.Chinese wok | 3 |
| 20.Karahi with covers | 15 |
| 21.Serving spoons, tea spoon, dessert spoons, fork, table spoons, measuring spoons, ladle, wooden spoon and wooden scraper and measuring cups | 3 of each per batch * 15 and 15 measuring spoons and cups |
| 22. Potato Masher | 15 |
| 23.Hand whisk | 15 |
| 24.Food covers | 15 |
| 25.Measuring scale | 2 |
| 26.Kitchen cloth | 2 per batch *15 |
| 27.Glasses | 15-20 |
| 28.Tong | 15 |

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| 29.Lemon/orange squeezer | 3 |
| 30.Flour dredger | 5 |
| 31.Ingredients tray | 15 |
| 32.Dustbins with cover | 15 |
| 33. Hand wash | 15 |
| 34. Liquid / Soap Dish washer | 15 |
| 35. Scotch brite scrubber | 15 |
| 36. Sink brush | 15 |

IV. Research

| Equipment | Quantity (Nos.) |
|--|------------------------|
| 27 Reagents (for experiments with food) | |
| 28 Test tubes | 30 |
| 29 Test tube holder | 15 |
| 30 Wire Gauze | 15 |
| 31 Funnel | 15 |
| 32 Beaker | 30 |
| 33 Glass stirrer | 15 |
| 34 Litmus Paper (pH Paper) | 10 strips |
| 35 Thermometer | 15 |
| 36 Titration range equipment | 1 |
| Measuring apparatus | |
| 37 Measuring flask / cylinder | 10 |
| 38 Measuring scale | 1 |
| 39 Height meter | 1 |
| 40 Height scale for infants | 1 |
| 41 Calipers | 1 |
| 42 Tape measure | 3 |
| 43 BCA machine | 1 |
| 44 Weighing scale | 1 |
| 45 Weighing scale for infants | 1 |
| 46 Sphygmomanometer | 1 |
| 47 Digital measuring BP Apparatus | 1 |
| 48 First aid box | 1 |
| 49 Computer | 1 |
| 50 UPS | 1 |
| 51 Printer | 1 |

XI. Basic requirement and dimensions of a work station in a Nutrition Lab for Practical's

Dimension of the counter- 5x7 feet (shared by two gas stoves i.e. 2 students work on either side)Space between two consecutive counters should be at least two and a half feet

Each counter also needs provision of a sink

XII. Furniture

| Furniture | Numbers (Nos.) |
|---------------------------|-----------------------|
| Chair | 30 |
| Table | 30 |
| Stool | 2 |
| Cupboard | 2 |
| i. For books | |
| j. For cooking equipments | |
| k. For Ingredients | |
| l. For appliances | |

XIII. Power Norms:

1. Kitchen/ Nutrition Lab - 8 plug points (4 x 16 amps; 4 x 5 amps) Anchor or Havells
2. Classroom - 3 plug points (4 x 16 amps; 4 x 5 amps) Anchor or Havells

XIV. Space size – 1280 Square Feet

7. Classroom - 200 square feet
8. Kitchen/ Nutrition Lab - 500 square feet
9. Store – 80 square feet

Process of assessment

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| Written and Practical Exam |
| Third Party Assessment: – 1. NCVT 2. Private assessor 3. India Dietary Association (IDA) 4. RDAT |

Name : Advance Fitness Training course (Certificate I)
Code : NHE 604

Sector : Nutrition and Health Education

Qualification : Minimum 12th Standard and 18 years of age

Duration : 453hrs (about 3 month's full time)

Faculty Qualification: Post Graduate in Physiotherapy / Graduate in BHMS / Post Graduate in Applied Nutrition / Post graduate in Sports Nutrition / Registered Dietician With a international Personal Training certification (ACSM /ACE/ISSA/NASM/Smart fitness university) and a minimum work experience of 3 years.

Minimum Batch Size : 30 Students

Terminal competency: Successful candidates would be able to work as a Trainer in the gyms, Cruise liners / free lancer / sports clubs and Hotels for training clients to achieve their fitness goals. This course would also inculcate professional ethics, and work Etiquettes.

Theory:

| Sr. No | Topics | Sub topics | Time (Hrs) |
|--|-------------------------|--|------------|
| 1 | Introduction to fitness | · Definition of fitness ,5 components of physical fitness | 8 |
| | | Types of Exercises | |
| | | · Strength Training and its benefits | |
| | | · Endurance Training and its benefits | |
| | | · flexibility Training and its benefits | |
| | | · Functional Training and its benefits | |
| | | · Bone –Introduction & Definition | |
| | | · Muscle – Introduction & Definition | |
| | | · Body types | |
| | | · Metabolism- | |
| | | · Basal metabolic rate-Definition | |
| | | · Definition of Hypertrophy,Hyperplasia,atrophy | |
| | | · Definition of intensity ,volume frequency,tempo,repetitions,sets | |
| | | Types of grips | |
| · Functional classification of muscles | | | |
| · Type of exercise movements | | | |
| 2 | Anatomy | · Definition | 10 |
| | | Types of anatomy | |
| | | Hierarchy of organization of organism | |

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| | Cell – Definition & examples | |
| | Tissue- Definition & examples | |
| | Organ- Definition & examples | |
| | Organ Systems- Definition & examples | |
| | Organism- Definition & examples | |
| | | |
| | | |
| | Types of bone cells & their function | |
| | Process of bone growth and resorption | |
| | Function of bones | |
| | Classification of skeleton | |
| | · Naming of bones(esp. appendicular bones) and total number of bones in the skeleton | |
| | · Types of bones according to shape | |
| | Definition and example of each type of bone | |
| | | |
| | Types of muscles | |
| | Parts of skeletal muscle | |
| | Properties of skeletal muscles | |
| | Names of skeletal muscles(important for trainers) | |
| | Types of muscles according to the number of joints they cross | |
| | Types of skeletal muscle contractions | |
| | · Cross bridge theory of muscle contraction | |
| | · Connective tissues | |
| | | |
| | · Nervous system structure & mechanism | |
| | · Motor unit and recruitment patterns | |
| | · Neurophysiology of muscular contraction | |
| | | |
| | · Proprioceptor anatomy and function | |
| | · Types of Hypertrophy | |
| | · Definition and process of EPOC/After burn effect | |

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|---|-------------|------------------------------|-----|
| 3 | Kinesiology | Definition | 3.5 |
| | | Planes definitions and types | |

| | | |
|--|---|--|
| | Types of joint movement | |
| | Definitions of Flexion,Extensionetc | |
| | Types of specific movements and defination | |
| | Joint definition and types | |
| | Classification of synovial joints/Diarthrosis | |

| | | | |
|---|--------------|--|-----|
| 4 | Biomechanics | · Definition ,Importance or Biomechanics in Exercise | 3.5 |
| | | · Curvatures of spine, Terms used in Bio mechanics | |
| | | · Types of levers | |
| | | · Types of forces | |
| | | · Types of motion at the body | |
| | | · Types of joint motions | |

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|---|------------------|---|---|
| 5 | Organ Physiology | Basic structure shape and location and function of | 1 |
| | | Heart ,Lungs,Kidneys,pancreas,stomach, thyroid, liver, gall bladder, spleen, intestine, bladder | |

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|---|-----------------------|--|---|
| 6 | Cardiovascular system | Introduction and Definition | 4 |
| | | Structure and physiology of heart at rest and during exercise | |
| | | Structure and physiology of pulmonary system at rest and during exercise | |
| | | oxygen deliver system | |
| | | vascular system | |
| | | Blood pressure ,heart rate, cardiac output | |
| | | Cardiovascular response to strength training | |
| | | Cardiovascular response to Aerobic training | |

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|---|---------------|-----------------------------|---|
| 7 | Energy system | energy defined | 3 |
| | | The biological energy cycle | |
| | | ATP - CP system | |
| | | Anarobic Lactic acid system | |
| | | Aerobic system | |

| | | | |
|---|---------------------|---------------------------------|---|
| 8 | Heart rate training | Why monitor your heart rate | 2 |
| | | Benefits of Heart rate training | |
| | | Maximal Heart Rate | |

| | | |
|--|---------------------------|--|
| | Resting Hert rate | |
| | Recovery Heart rate | |
| | Heart rate reserve | |
| | Target Heart Rate | |
| | Karvina's formula | |
| | How to monitor heart rate | |
| | Heart rate zones | |
| | RPE scale | |

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|---|------------------|--|---|
| 9 | Cardio exercises | <ul style="list-style-type: none"> FITT principle of aerobic exercises | 5 |
| | | <ul style="list-style-type: none"> RPE scale, definition, process | |
| | | <ul style="list-style-type: none"> Introduction to cardio equipments | |
| | | <ul style="list-style-type: none"> Aerobic & anaerobic exercises on cardio equipments | |
| | | <ul style="list-style-type: none"> Types of aerobic exercises | |
| | | <ul style="list-style-type: none"> Use, Benefits, safety precaution and contraindications | |
| | | <ul style="list-style-type: none"> Calibration and maintenance | |

| | | | |
|----|----------------------------------|---|---|
| 10 | Resistance and Strength Training | <ul style="list-style-type: none"> Basic Principles of strength and conditioning | 4 |
| | | <ul style="list-style-type: none"> Types of loads | |
| | | <ul style="list-style-type: none"> Difference between free weights & machine weights | |
| | | <ul style="list-style-type: none"> Types of pulleys in machine | |
| | | <ul style="list-style-type: none"> Equipment use and safety | |
| | | <ul style="list-style-type: none"> Contraindications during Resistance exercise | |

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|----|---|---|---|
| 11 | Warm up , Cool Down & Stretching Theory | <ul style="list-style-type: none"> Stretching - Definition, Types, Benefits and guidelines | 4 |
| | | <ul style="list-style-type: none"> Importance of warm up & cool down | |
| | | <ul style="list-style-type: none"> Benefits of warm up & cool down | |
| | | <ul style="list-style-type: none"> Types of warm up & cool down | |
| | | <ul style="list-style-type: none"> Guidelines | |

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|----|-------------|--|---|
| 12 | Legs theory | <ul style="list-style-type: none"> Importance of strength and conditioning of legs | 3 |
| | | <ul style="list-style-type: none"> Basic structure of the Hip,Knee and Ankle joints | |

| | | |
|--|---|--|
| | · Name and location of muscle of legs | |
| | | |
| | · Muscle attachments (origin insertions) | |
| | · Study of deeper muscles on depth | |
| | e.g; abductors, adductors, gluteals, peroneal group of muscles | |
| | Basic lower body workout and their analysis which includes | |
| | Plane of exercise, type of exercise movement, primemovers, synergists and stabilizers | |
| | High risk exercise and reasoning of not doing it. | |

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|----|---------------------|--|---|
| 13 | Legs Practical Demo | Legs Workout instructions in scientific language | 8 |
| | | workout instructions in common language | |
| | | practical exercise analysis | |
| | | practical demonstration | |
| | | practical correction of students | |

| | | | |
|----|-------------|---|---|
| 14 | Back theory | · Importance of strength and conditioning of back | 3 |
| | | Name and location of muscle of back | |
| | | Muscle attachments(origin insertions) | |
| | | Study of deeper muscles on back | |
| | | Back workout and their analysis which includes | |
| | | Plane of exercise, type of exercise movement, primemovers, synergists and stabilizers | |
| | | High risk exercise and reasoning of not doing it. | |

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|----|---------------------|--|---|
| 15 | Back practical Demo | Back Workout instructions in scientific language | 8 |
| | | workout instructions in common language | |
| | | practical exercise analysis | |
| | | practical demonstration | |
| | | practical correction of students | |

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|----|--------------------|--|-----|
| 16 | Chest & abs theory | · Importance of strength and conditioning of chest and abs | 3.5 |
|----|--------------------|--|-----|

| | | |
|--|---|--|
| | Name and location of muscle of chest and abs | |
| | Muscle attachments(origin insertions) | |
| | Study of deeper muscles on chest and abs | |
| | Chest workout and their analysis which includes | |
| | Plane of exercise, type of exercise movement,primemovers,synergists and stabilizers | |
| | High risk exercise and reasoning of not doing it. | |

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| 17 | Chest / Abs Practical Demo- | Chest / Abs Workout instructions in scientific language | 8 |
| | | workout instructions in common language | |
| | | practical exercise analysis | |
| | | practical demonstration | |
| | | practical correction of students | |

| | | | |
|----|--------------------------|--|---|
| 18 | Shoulder and Arms theory | Importance of strength and conditioning of shoulder and arms | 4 |
| | | Basic structure of the Shoulder, elbow and radio-ulnar joints | |
| | | Name and location of muscles of shoulder and arms | |
| | | Muscle attachments(origin insertions) | |
| | | Basic shoulder and arms workouts and their analysis which includes | |
| | | Plane of exercise, type of exercise movement, primemovers,synergists and stabilizers | |
| | | High risk exercise and reasoning of not doing it. | |

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| 19 | Shoulder / Arm Practical Demo | Shoulder / Arm Workout instructions in scientific language | 8 |
| | | workout instructions in common language | |
| | | practical exercise analysis | |
| | | practical demonstration | |
| | | practical correction of students | |

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|----|-------------|---------------|---|
| 20 | Core theory | · Definition | 2 |
| | | Importance | |
| | | Parts of core | |

| | | |
|----|--|---|
| | Muscles | |
| | Exercises(theory) | |
| 21 | Core Training practical demo | 8 |
| | Inner & Outer core Workout instructions in scientific language | |
| | using body weights & external resistance | |
| | workout instructions in common language | |
| | practical exercise analysis | |
| | practical demonstration | |
| | practical correction of students | |
| 22 | Functional training | 4 |
| | · Definition | |
| | · Difference between weight training & functional training | |
| | · Components of Functional training | |
| | · Free body weight exercises | |
| | · Exercises using resistance | |
| | · Modalities of functional training | |
| | · Analysis of FT exercises | |
| | · Scheduling of Functional training exercise | |
| 23 | Functional Training Practical | 6 |
| | Body weight workouts in scientific language | |
| | Demo | |
| | workout instructions in common language | |
| | practical exercise analysis | |
| | practical demonstration | |
| | practical correction of students | |
| | Resistance workouts in scientific workouts | 6 |
| | workout instructions in common language | |
| | practical exercise analysis | |
| | practical demonstration | |
| | practical correction of students | |
| | Cone, Ladder, Medicine Ball & Swiss Ball Exercises | 6 |
| | workout instructions in common language | |
| | practical exercise analysis | |
| | practical demonstration | |
| | practical correction of students | |
| 24 | Scheduling | 4 |
| | · Definition | |
| | Importance | |

| | | |
|--|--|--|
| | Points to remember before scheduling | |
| | Principles | |
| | Who are beginners? Expectable goal | |
| | Basic 1 and 2 schedules with reps ,set and rest period and exercise order. | |
| | | |
| | Who are intermediates? Expectable goal | |
| | Intermediate schedules with reps ,set and rest period and exercise order. | |
| | | |
| | Who are advanced? Expectable goal | |
| | Advanced schedules with reps ,set and rest period and exercise order. | |

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| 25 | Periodization | Definition | 3 |
| | | Factors affecting periodization | |
| | | Supercompensation cycle definition and theory with graph | |
| | | Biomotor abilities and their definitions | |
| | | Types of strength | |
| | | Types of endurance | |
| | | Types of Flexibility | |
| | | Cycles of periodization | |
| | | Phases of periodization for strength | |
| | | Phases of periodization for endurance | |
| | | Integrated periodization sample | |

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| 26 | Postural Analysis and correction Techniques | Health history | 3 |
| | | exercise history | |
| | | postural analysis | |
| | | side view | |
| | | back view | |
| | | Muscle length | |
| | | Muscle Function | |
| | | Different Postural problems and its rectification | |

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| 27 | Special Population | Absolute and Relative contraindications | 15 |
| | | Basis of supervised program-Medical Conditions (Currently under control) | |

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| | Understanding, management and exercise safety precautions for people having | |
| | Allergy | |
| | Anaemia | |
| | Bleeding Trait | |
| | Bronchitis (controlled) | |
| | Diabetes | |
| | Hypertension | |
| | Pregnancy | |
| | Obesity | |
| | Asthama | |
| | Osteoporosis | |
| | Arthritis | |
| | Elderly | |
| | Children | |
| | Angioplasty | |
| | Vertigo | |
| | Post Bypass surgery (CABG) | |
| | Colitis | |
| | Post natal | |
| | Emphysema | |
| | Epilepsy post recovery- 5 years under supervision | |
| | Cancer under rehabilitation after recovery- 5 years, | |
| | Thyroid | |
| | Hernia (Operated) post operative cut off duration is 3 months) | |
| | Hearing Loss, Eye problems | |
| | Gout | |
| | Prosthesis (Metal Implant) | |
| | Pre activity readiness questionnaire to screen medical clients at the time of joining a program (PARQ form) | |
| | Cardiac patients under rehabilitation | |

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|----|--------------------------------|--------------------------|---|
| 28 | Sports injuries and prevention | Introduction | 5 |
| | | What are sports injuries | |
| | | Sprains and Strains | |
| | | Knee injuries | |
| | | Compartment Syndrome | |
| | | Shin splints | |

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| | Achillies tendon injuries | |
| | lumbar injuries | |
| | cervical injuries | |
| | dislocated joints | |
| | fractures | |
| | types and handling | |
| | shoulder injuries | |
| | prevention of injuries | |
| | different surgical methods to treat injuries | |

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| 29 | First aid & bandaging techniques | <ul style="list-style-type: none"> · Management of hypotension | 4 |
| | | <ul style="list-style-type: none"> · Management of hypoglycemia | |
| | | <ul style="list-style-type: none"> · Management of choking | |
| | | <ul style="list-style-type: none"> · Management of convulsion | |
| | | <ul style="list-style-type: none"> · Management of cuts & bleeding | |
| | | <ul style="list-style-type: none"> · Management of fractures and dislocation | |
| | | <ul style="list-style-type: none"> · Management of Dehydrataion / Hyperthermia | |
| | | Fainting attack | |
| | | Asthma | |
| | | Case of Angina, MI | |
| | | Sprain | |
| | | <ul style="list-style-type: none"> · Different types of bandaging techniques theory & demo | |

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| 30 | CPR (Cardio Pulmonary Resuscitation) | | 4 |
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| 31 | Basic Nutrition | Structure, Classification Functions, Metabolism, storage, utilization and sources of | 10 |
| | | o Carbohydrates | |
| | | o Proteins | |
| | | o Fats | |
| | | o Vitamins | |
| | | o Minerals | |
| | | o Water | |
| | | o Fibre | |

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|----|-----------------|--|---|
| 32 | Supplementation | Types | 5 |
| | | Functions | |
| | | Difference between Nutritional supp and ergogenic aids and performance enhancers | |
| | | Whey | |
| | | Creatine | |
| | | Weight gainers | |
| | | Meal replacements | |
| | | Fat burners | |
| | | Amino Acids | |
| | | Chromium Piconilate | |
| | | Nitric Oxide | |
| | | Glutamine | |
| | | Branched Chain Amino acids (BCAA) | |
| | | How to select a supplement | |

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|----|-------------------------------|------------------------------------|---|
| 33 | Side Effects of steroid abuse | Introduction | 1 |
| | | Anabolic steroids | |
| | | Side effects of AAS | |
| | | long - term effects of steroid use | |
| | | AAS use in men | |
| | | AAS use in women | |
| | | Psychological side effects | |

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| 34 | Importance of massaging | · Principle , types, methods and benefits, contraindications. | 2 |
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| 35 | Science behind steaming | · Indications, contraindications, benefits | 0.5 |
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| 36 | Soft skills & Grooming skills | · Grooming | 3 |
| | | · General Mannerisms and etiquettes | |
| | | · Mannerisms and etiquettes with the client | |
| | | · How to Counsel the client | |
| | | · Body Language analysis and interpretation | |

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| 37 | First aid & bandaging techniques | · Management of hypotension | 3 |
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| | · Management of choking | |
| | · Management of convulsion | |
| | · Management of bleeding | |
| | · Management of fractures and dislocation | |
| | · Different types of bandaging techniques theory & demo | |
| | · Management of hypoglycemia | |

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| 38 | GGX Exposure | 1. Aerobics | 1 |
| | | 2. Kick boxing | 1 |
| | | 3. Yoga | 1 |
| | | 4. Pilates | 1 |
| | | 5. Zumba | 1 |
| | | 6. Step aerobics | 1 |

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| 39 | Equipments | Calliberation&Maintainance of Equipments | 6 |
| 40 | Traditions | Fitness diets in Gyms / Akharas | 2 |

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|-------------|--|-----|
| Total Hours | | 202 |
|-------------|--|-----|

| sr. no. | Topics | Hours |
|---------|---|-------|
| 1 | Practical Trial 1 – Legs | 3 |
| 2 | Practical Trial 2 – Back | 3 |
| 3 | Practical Trial 3 – Chest and abs | 3 |
| 4 | Practical Trial 4 – Shoulder and arms | 3 |
| 5 | Practical Trial 5 –Functional Training | 4 |
| 6 | Practical Trial 6- Core Training | 4 |
| 7 | Practical Trial 7 –Beginner – Whole body workouts | 3 |
| 8 | Practical Trial 8 –Beginner- Upper body | 3 |
| 9 | Practical Trial 9- Beginner- Lower body | 3 |

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| 10 | Practical Trial 10- Intermediate-Chest,Shoulder ,triceps(Push schedule) | 3 |
| 11 | Practical Trial 11- Intermediate-Back,Rear Delt,Biceps(Pull schedule) | 4 |
| 12 | Practical Trial 12-Intermediate-Lower Body | 3 |
| 13 | Practical trial 13-Advanced – Chest ,Biceps | 3 |
| 14 | Practical Trial14 –Advanced-Back,Rear Deltoid | 3 |
| 15 | Practical Trial 15-Advanced-Shoulder Triceps | 3 |
| 16 | Practical Trial 16 –Advanced-Lower Body | 3 |
| | Total | 51 |

Internship: -200 hours – Here the students shall be put through real time training Handling the Realmembers and their goals.

Consumables Tools and Equipments (As per requirement)

| |
|---|
| White board Screen for projector |
| Projector Human Bone set |
| Markers (Black, Red, Blue, Green) CPR Dummy |
| Duster Laptop |

Equipment List

| |
|---|
| Leg Extension Machine Butterfly Machine |
| Leg Curl Machine Bench press Stand |
| Cross pulley flat Bench |
| Dumbbells Multi Adjustable Bench |
| Big Weight Rod Shoulder Press Machine |
| Small Rod Leg Press Machine |
| Chin Up Machine HYPER EXTENSION |
| Chest Press Machine HACK SQUAT CALF RAISE MACHINE |
| INCLINE BENCH SQUAT STAND |
| EZ BAR EXERCISING MAT |
| EXERCISING BALL seated calf raise machine |

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|---|
| decline bench lat pull down machine |
| bosu trainer Motorised Tread mill |
| Elliptical Bike Recumbent Bike |
| Upright Bike Dumbbells Rack |
| Weighing Machine Body Composition machine |
| MUSIC SYSTEM SONY LCD |
| FIRST AID BOX WALL CLOCK |

Space size – 2750 Square Feet

| |
|---------------------------------------|
| Space size – 2750 Square Feet |
| Class room (AC) – 750 sqft |
| Practical training room – 1500 sqft |
| Changing Room with showers – 300 Sqft |
| Reception – 200 sqft |

Furniture:

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| · Chairs with writing flaps |
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Process of assessment

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| Written, Practical and Viva Exam |
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