

**MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION, MUMBAI .**

1	Name of Course		Diploma Course in Dietician & Nutrition Science (W. E. F. 2015-16)								
2	Course Code		201418								
3	Max.No.of Students Per Batch		25 students								
4	Duration		2 years								
5	Type		Full time								
6	No.Of Days / Week		6 Days								
7	No.Of Hours /Days		7 hrs								
8	Space Required		1) Theory Class Room – 200 sqft    2) Practical Lab – 400 sqft 3) Space required for Practical of English, Elective – 1 & Elective - 2 Subject = 1200 Sq.Ft. (400 Sq.ft. x 3) = <b>Total 1800 Sq.Ft.</b>								
9	Minimum Entry Qualification		S.S.C pass								
10	Objective Of Course		To create a skilled Nutrition & Dietitian Professional Expert.								
11	Employment opportunity		<ul style="list-style-type: none"><li>To develop &amp; run Nutrition &amp; Dieticians Centres all over India &amp; Abroad.</li><li>Job in Naturopathy centres, Nutrition &amp; Dietetic department &amp; Hospitals.</li></ul>								
12	Teachers qualification		Bachelor in Naturopathy and Yogic sciences (BNYS), Nutrition & Dieticians Dept. (MBBS Or BAMS Or BHMS Or Naturopathist Or physiotherapist Or psychologist Graduates & Post Graduates, etc, can teach their concerned subjects								
13	Teaching Scheme -										
	Sr.	Subject	Subject Code	Clock		Hours/Week					
				Theory		practical		Total			
	1	English (Communication skill)	90000001	2 hrs		1 hrs		3 hrs			
	2	Elective-I	--	2 hrs		1 hrs		3 hrs			
	3	Elective-II	--	2 hrs		1 hrs		3 hrs			
	4	Anatomy, Physiology and Pathology	20140004	3 hrs		8 hrs		11 hrs			
	5	Nutrition and Dietetics	20140039	3 hrs		8 hrs		11 hrs			
	6	Dietician therapeutics	20140040	3 hrs		8 hrs		11 hrs			
	Total						42 hrs				
14	Internship		Two Month Summer Internship from 1st May to 30th June is Compulsory.								
15	Examination Scheme- Final Examination will be based on syllabus of both years.										
	Subject		Subject Code	theory			Practical			Total	
				Duration	Max	Min	Duration	Max	Min	Max	Min
	1	English (Communication Skill)	90000001	3 Hrs	70	25	3 Hrs	30	15	100	40
	2	Elective-I	--	3 Hrs	70	25	3 Hrs	30	15	100	40
	3	Elective-II	--	3 Hrs	70	25	3 Hrs	30	15	100	40
	4	Anatomy, Physiology and Pathology	20140004	3 Hrs	100	35	3 Hrs	100	50	200	85
	5	Nutrition and Dietetics	20140039	3 Hrs	100	35	3 Hrs	100	50	200	85
	6	Dietician therapeutics	20140040	3 Hrs	100	35	3 Hrs	100	50	200	85
	Total								900	375	
16	Teachers – Three Teachers per batch for vocational component. For English, Elective-I & II guest faculty on clock hour basis.										
17	Student have to choose any one subject for Elective-I and Elective-II from below given subjects										
18	a) For Elective I – Student can choose any one subject					b) For Elective II – Student can choose any one subject					
	Code		Subject Name			Code		Subject Name			
	90000011		Applied Mathematics			90000021		Applied Sciences (Physics & Chemistry)			
	90000012		Business Economics			90000022		Computer Application			
	90000013		Physical Biology (Botany & Zoology)			90000023		Business Mathematics			
	90000014		Entrepreneurship								
90000015		Psychology									

**Theory - I - Anatomy, Physiology and Pathology – 1<sup>st</sup> year**  
**(Subject Code – 20140004)**

<b>Theory</b>	<b>Practical</b>
<b>ANATOMY PHYSIOLOGY</b> <b>Detailed Syllabus</b> <b>I. Basics in Anatomy</b> 1. Introduction to Human Anatomy 2. Cell structure, properties of cell, tissues - epithelial, connective muscular, nervous 3. Digestive System and Hepato Biliary System 4. Respiratory System 5. Cardio vascular System 6. Lymphatic System 7. Bones and Joints 8. Nervous System 9. Endocrine System 10. Sense Organs Eye, ear, skin, nose, tongue 11. Excretory System 12. Reproductive System <b>Basics</b> 1. Introduction to Human Physiology 2. Blood 3. Cardio vascular system 4. Lymphoid System 5. Digestive system 6. Respiratory system 7. Nervous system 8. Endocrine system 9. Excretory System 10. Reproductive system 11. Sense organs	<b>ANATOMY AND PHYSIOLOGY</b> <b>1. Human Skeleton</b> It includes - 1) Names of the Bones 2) Identification points 3) Surfaces (Skull, scapula, clavicle, humerus, radius, ulna, carpal bones, meta carpal bones, Phalanges. Innominate bone, Femur, patella tibia, fibula, tarsal bones, meta tarsal bones, Phalanges, Ribs-classification, vetebrae pieces, sternum.) <b>2. Human Organs</b> Brain, Stomach Lungs, Intestines Heart, Kidney Liver, Uterus Spleen, Fallopian tubes <b>3. Human slides</b> Epithelial Tissue Connective Tissue Muscular Tissue Nervous Tissue Liver Kidney Spleen Pancreas Lymphnodes Skin testes Ovary Uterus Tonsil Stomach layers Small Intestine Large Intestine <b>4. Blood Pressure</b> Estimation <b>5. T.P.R. (Temperature, pulse, respiration) Chart</b> <b>6. TC, DLC, (TC - Total count RBC Total count of WBC DLC differential count of Leucocyts)</b>

## Anatomy, Physiology and Pathology – 2<sup>nd</sup> year

Theory	Practical
<p><b>PATHOLOGY</b></p> <p>1. Urine - Analysis - Physical Examination - specific gravity PH, reaction, colour</p> <p>Chemical Examination - Sugar Albumin, bile salts, bile Pigments etc.</p> <p>Microscopic Sediment for RBC, WBC, Epithelial cells, casts, crystals, parasites</p> <p>Preparation of Reagents, procedure and principle of tests</p> <p>2. Sputum Analysis - Physical Examination, Preparation and staining smear for Microscopic Examination</p> <p>3. Semen Analysis- Physical Examination Microscopy - counting, motility, staining, Morphology, abnormal and normal forms.</p> <p>4. Body Fluids - Differential count of Peritoneal, pericardial, pleural fluids and CSF, charging chamber, Identifying and counting the cells.</p> <p>3. Haematology -</p> <p>a. Collection of Blood -</p> <p>Methods of collection veinpuncture, finger puncture and vacutainer</p> <p>methods, materials required procedures, precautions, uses of the sample and advantages of each methods. POCT (sample collection at bed side)</p> <p>b. Preparation of anti coagulants -</p>	<p><b>PATHOLOGY</b></p> <p>Blood Collection</p> <p>Precaution and smearing techniques and labelling of the sample</p> <p>Preparation of anticoagulants</p> <p>RBC, WBC, &amp; platelet count</p> <p>ESR stands &amp; ESR estimation</p> <p>PCV &amp; calculation of RBC indices</p> <p>Hb estimation by different methods</p> <p>Urine - Physical Examination &amp; Chemical Examination</p> <p><b>PRACTICAL</b></p> <p>I. Automatic Tissue Processer</p> <p>Microtome &amp; Knives</p> <p>Centrifuge</p> <p>Hot air oven &amp; Incubator</p> <p>Busm beaker, stop watch</p> <p>Glass Makers</p> <p>Simple balance &amp; colorimeter</p> <p>Water bath - for tissue flotation</p> <p>Knowledge</p> <p>Maintenance &amp; cleaning</p> <p>Care about tissue equipment</p> <p><b>II. Maintenance &amp; preservation of</b></p> <p>Cytology slides</p> <p>M.P. blocks &amp; slides</p> <p>Histopathology specimens and process</p>

<p>Double oxalate, sodium citrate, EDTA, Heparin, action of each</p> <p>preparation, uses disadvantages, quantity required.</p> <p>c. RBC, WBC Count :</p> <p>Methods (Microdilution and bulk dilution)</p> <p>Materials required, diluting fluids, preparation, procedures, advantages of each methods,</p> <p>precautions, formula for calculation and clinical significance.</p> <p>d. Platelet count :</p> <p>Morphology and functions of platelets diluting fluids, procedure,</p> <p>formula for calculation and clinical significances</p> <p>e. Reticulocyte Count :</p> <p>Methods (dry &amp; wet) staining, diluting fluids, normal Morphology</p> <p>and values, clinical significance.</p> <p>f. Haemoglobin Estimation -</p> <p>Materials, procedure, of Tallquist, sahli, Alkali haldanis, cyanmeth</p> <p>aemoglobin and S.G. method, advantages and disadvantages and</p> <p>clinical significance</p> <p>g. Estimation of PCV -</p> <p>Macro &amp; Micro Method, procedure filling the tube, centrifuging and</p> <p>reading, advantages of each - normal values and clinical</p> <p>significance</p> <p>Estimation of Erythrocyte indices - calculation and importance</p>	<p>Preparation of form section material</p> <p><b>III. Glass ware</b></p> <p>Microslides &amp; coverstips</p> <p>Sample collection bottles</p> <p>Micropathology</p> <p>Cytology.</p> <p><b>IV. Immuno Haematology &amp; blood banking</b></p> <p>ABO blood grouping techniques</p> <p>RH Factor</p> <p>Coombs test - Direct &amp; indirect methods</p> <p>34</p> <p><b>V. Histopathology</b></p> <p>1. Fixation of biopsy tissue</p> <p>2. Processing of tissue</p> <p>Fixation</p> <p>Dehydration</p> <p>Clearing</p> <p>Impregnation</p> <p>Mounting</p> <p>Decalcification</p> <p>3. Mounting of museum specimens</p> <p><b>VI. Cytology</b></p> <p>Fixations used</p> <p>Fluid preparation for cytological exam</p> <p>Slide preparation and staining</p> <p>Pap staining</p> <p>Mounting and preservation</p> <p><b>VII. Sick Cell Preparation</b></p>
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<p>MCV, MCH, MCHC, RDW, color index.</p> <p>h. ESR -</p> <p>Methods used, procedure, stages, factors affecting and clinical significance</p> <p>I. Preparation of Blood smear examination -</p> <p>Making ideal films - slide method, cover glass method and staining,</p> <p>Morphology of RBC, WBC, Platelets and Haemop araasites.</p> <p>Differential Leucocyte Count - counting and identification of cells</p> <p>- Normal values, Morphology, procedure for smears and staining</p> <p>clinical significance and limitation.</p> <p>Absolute Eosinophil count - Materials, diluting fluid, procedure,</p> <p>identifying and counting the cells.</p> <p>II. Special stains on peripheral blood smear and bonemarrow smears-</p> <p>Ramanoskys stains, Leishman, Gemsia, wrights, Mycloperoxidase</p> <p>stain, PAS (Periodic Acid Schiff) - Preparation, method and</p> <p>selection of stain, Buffer Solution.</p> <p>Bone Marrow Smear - Preparing smears, cuithont crush artefacts</p> <p>staining and clinical significane.</p> <p>III. Identification of Hemoparasites - Malarial Parasite, Microfilaria,</p> <p>Leishman making thick and thin films procedure and identification</p> <p>of parasite.</p> <p>IV. Sickle Cell Preparation - Principle,</p>	<p>VIII. Bone Marrow Smears Preparation &amp; Staining</p> <p>IX. Cougulation Test, BT, CT.</p>
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<p>procedure and Methods,</p> <p>Materials, clinical significance</p> <p>V. Osmotic fragility test - Methods used, materials procedure,</p> <p>observation reporting, normal values, factors affecting,</p> <p>interpretation.</p> <p>VI. Coagulation Tests</p> <p>a) Bleeding time - methods, dukes, Ivy's procedure Normal value,</p> <p>clinical significance</p> <p>b) Cloting time - methods, Lee &amp; White, procedure materials,</p> <p>normal values, factors affecting coagulation clinical significance</p> <p>c) Prothrombin time (PT)</p> <p>d) APTT - in Detail</p> <p>VII. L.E. cell Test - Principle, procedure, materials reproting, clinical</p> <p>significance and titration.</p> <p>Buffy coat preparation - LE Cell Test, Microfilaria Abnormal cells.</p> <p>VIII. Basics of coulter counter</p> <p>IX. Autopsy - Aims &amp; methods of performing Autopsy cleaning,</p> <p>suturing and retaning the body. Cleaning autopsy instruments,</p> <p>tables and rooms, preservation of organs.</p> <p>Processing and preparation of Histopathology.</p> <p>X. Histopathology -</p> <p>1) Biopsy</p> <p>2) Processing of tissue</p> <p>a) Fixation</p>	
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<p>b) Dehydration</p> <p>c) Clearing</p> <p>d) Impregnation</p> <p>e) Mounting</p> <p>f) Decalcification of Bone</p> <p>g) Routine Paraffin staining</p> <p>h) Immuno histochemists</p> <p>3. Microtomes and Knives</p> <p>XI. Museum Techniques</p> <p>Labelling &amp; storage of specimens</p> <p>Methods of color maintenance</p> <p>Presentation of specimen</p> <p>Mounting labelling and cataloging the specimen</p> <p>Maintenance and cleanliness of the Museum</p> <p>Disposal of waste, safety in the lab</p> <p>XII. Immuno Haematology and Blood Banking</p> <p>i) Introduction</p> <p>2) Human blood group antigens, their inheritance and antihodies</p> <p>3) ABO Blood group systems</p> <p>4) RH Blood group system</p> <p>5) Techniques of grouping and cross matching</p> <p>6) Blood collection, Preservation and maintaining of Records</p> <p>7) Coombs Test - a ) direct b) indirect</p>	
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## THEORY - II - NUTRITION & DIETETICS - 1<sup>st</sup> Year

(Subject Code – 20140039)

(100 Marks)

Introduction to Nutrition:-

- What is Nutrition?
- History of Nutrition.
- The food guide pyramid.
- What are nutrients & their functions.
- What is malnutrition, under nutrition & over nutrition.
- Guidelines for good health -Role of food in health.
- To know nutritional composition of food
  - food as a source of nutrients.
- Food intake & its Regulations:-
  - Hunger, appetite & satiety
  - Regulation of hunger
- Recommended dietary intakes (RDI)

I. Food Chemistry:-

- a) Nutritive value of food ingredients commonly used in India.
  - b) Composition of body
  - c) Energy
  - d) Carbohydrates:- Introduction, classification, digestion, absorption, functions & sources.
  - e) Proteins:- Introduction, classification, digestion, absorption, functions & sources.
  - f) Fats & oils:- Introduction, classification, digestion, absorption, functions & sources.
  - g) Vitamins:- Fat soluble & water soluble vitamins, various sources of vitamins & deficiency diseases.
  - h) Mineral elements:- major minerals & minor minerals
  - i) Water & electrolytes:- functions, sources & deficiency.
  - j) Alcohol
  - k) Fibre:- functions, deficiency & sources.
  - l) Enzymes
  - m) Cellulose
- Energy balance & the regulation of the body weight.
- Energy requirement of the body.
- Food properties:-
- i. Physical properties.
  - ii. Acids, bases & buffers
  - iii. The chemical bond.
  - iv. Colloids.



## II. Foods, Food Composition & their Nutritive value.

- 1) Beverages:- coffee, Tea, Cocoa, soft drinks, fruit Beverages, Alcoholic Beverages, etc.
- 2) Fruits:- Classification, Composition, Fruit ripening & storage:- Berries, citrus fruits, drupes, grapes, melons, pomes, tropical & subtropical fruits, dry fruits, jams & jellies.
- 3) Vegetables:- Classification, composition, Nutritive values:- Cole crops, Root vegetables, Fruit vegetables, cucurbits, leafy vegetables, tuber vegetables, Bulbs, other vegetables.
- 4) Cereals:- Production, structure, composition & storage:- Wheat, Rice, Maize, Sorghum, Millets, Barley, Oats & Rye
- 5) Pulses:- Composition, processing, utilization, toxic constituents of pulses, some important pulses.
- 6) Nuts:- Nuts as a food, cashew, coconut, ground nut, almonds, chestnuts, pistachio, walnut, etc.
- 7) Oils & Fats in foods:-
  - Nutrition importance of oils & fats.
  - Functions of oils & fats.
  - Processing of oils & fats
  - Animal fat
  - Vegetable oils
  - Sources of Edible oils.
- 8) Spices:- Composition & Nutritive value  
Major spices of India  
Minor spices of India
- 9) Milk & milk products: - Composition, properties & Nutritional importance of milk.
- 10) Eggs
- 11) Meat
- 12) Poultry
- 13) Seafood.
- 14) Sugar & jiggery
- 15) Honey

## **THEORY - II - NUTRITION & DIETETICS - 2<sup>nd</sup> Year**

(100 Marks)

- Food preparation, preservation & processing:-
  - 1) Cooking of foods:-
    - Methods of cooking
    - Cooking media
    - Microwave cooking
    - Solar cooking
    - Changes in cooking
  - 2) Food & Toxins:-
- Non nutritional constituents & food safety:-
  - Naturally occurring Toxicants & infective agents in food
  - Microbial toxins
  - Bacterial food poisoning
  - Contaminants rising from processing
  - Adulteration of food
  - Food additives
  - Adverse effects of artificial food colouring
  - Adverse effects of artificial manures & pesticides to the foods
  - Methods of food preservations & processing
  - Salt eating & food toxicity
- 3) Nutrition & Immunity :-Food which increase immunity.
- 4) Nutritional deficiency diseases, preventive and curative approach
- 5) Study about adverse effect of alcohol
- 6) Community nutrition:-
  - National health programmes in India –ICDS, Mid-day meal programme, Anaemia Control programme, Vit-A prophylaxis programme.
  - International agencies- FAO, UNICEFF, WHO,
- Nutrition education-
  - Methods:- lecture, Demonstration, street play, exhibition, group discussion & home visit.
- Assessment of nutritional status:-
  - Objectives
  - Types of methods
    - 1) Anthropometric measurements:  
Age, Weight, Height, Arm, Head & Chest, Circumference, Skin-fold thickness.
    - 2) Clinical assessment of Nutritional status:(NAC-ICMR std Chart/schedule)
    - 3) Radiological measures.
    - 4) Biophysical measurements
    - 5) Biochemical methods
    - 6) Vital statistics
- Introduction with Dietetics:-
- Dietetics principles
- Concept of wholesome diet.
- Medicinal values of foods
- Medicinal Herbs, medicinal plants, etc

- Bach Flower Remedy:-healing with flowers.
- Natural foods & Health:-
  - Importance of green leafy vegetables, other vegetables, fruits and raw ingredients in curing various diseases.
  - Chemical composition of different Raw juices & their therapeutic effects:- wheat grass juice, Beet Root Juice, Cabbage Juice, cucumber juice, lettuce juice, garlic juice, onion juice, lemon juice, orange juice, papaya juice, bottle guard juice, pineapple juice, mango juice, pumpkin juice, tomato juice, turnip juice, pomegranate juice, Turmeric juice, Ginger Juice, etc.
  - Sprouts their nutritive values & Methods of sprouting
  - Foods values in raw state, germinated form & cooked form.
  - Comparison with raw food & cooked food.
- Food combination & Health
- Herbs & health
- Classification of diet according to naturopathy
- Concept of health in naturopathy
- Hospitals dietetics
- Seasonal changes in the dietary pattern in Naturopathy
- Naturopathic approach towards vegetarian and non vegetarian food
- Food hygiene & health
- Methods of cooking & nutrient losses
- Dietary fibre its sources and its therapeutic effect
- Geriatric nutrition & diet
- Importance of “Breast feeding”& Artificial feeding. Composition of Human milk, Cow’s milk, Buffalo’s Milk.

## **PRACTICAL - II - NUTRITION & DIETETICS - 1<sup>st</sup> Year**

- Visit to the Nutrition & Dietetics ward in Hospitals (Naturopathy & Allopathy)
- Introduction with various types of foods
- Food rich in carbohydrates, proteins, fats, vitamins & minerals.
- Canteen duties at Naturopathy & Allopathy Hospitals.
- Identification of foods of various groups, their composition & Nutritive values.
- High calorie diet.
- Low calorie diet.
- Negative food diet.
- Diet As per Age & Working Life Style
- Practical Record book.

## **PRACTICAL - II - NUTRITION & DIETETICS - 2<sup>nd</sup> Year**

- Practical demonstration of various cooking methods.
- Practical demonstration Nutrition Education
- Wholesome diet
- Visit to Naturopathy & Allopathy hospitals to see preparation of various types of Diets in hospitals.
- How to maintain food hygiene.
- High fibre diet.
- Calculation of Nutritive value of food.
- Demonstration of sprouts preparation.
- Raw diet preparation
- Boiled diet preparation
- Planning of all combinations of diets.
- Preparation of different soups.
- Salt free diet, fat free diet, oil free diets.
- Practical Record Book.

## **THEORY - III - DIETICIAN THERAPEUTICS - 1<sup>st</sup> Year**

**(Subject Code – 20140040)**

### **A. Therapeutic diets & Effective Nutritional counseling.**

- Principles of the Diet plan.
- Role of Dietitian.
- Drug & Diet interaction.
- Effects of drugs and food & Nutrients.
- Diet therapy and types of Therapeutic Diets.
- Modifications in diet consistency :-
  - a. Soft diet – Composition, menu plan for veg/non veg sample menu.
  - b. Clear fluid diet – Composition.
  - c. Full fluid diet – Composition.
- Hospital diets & Progressive modifications.
- Additional modifications in texture & consistency of diet.
- Modification of Normal diet during illness & convalescence.

### **B. Special feeding methods.**

- Intravenous feeding – composition.
- a. Techniques i) Peripheral venous infusion . ii) Infusion through a polythene tube into the deep veins.
- b. Nutrients used in intravenous feeding :-
  - i) Water & Electrolytes. ii ) Carbohydrates & alcohol .iii) Amino Acids. iv) Whole blood or plasma. V ) Emulsified fats & vitamins.

### **C. Parenteral Nutrition.**

- Solution for parenteral Nutrition – Composition.
- Tube – feeding (Nasogastric – feeding) – Advantages.
- Diet for tube feeding – calorie, protein, fat, carbohydrate, fluid, electrolytes, vitamins.
- Composition tube feeding.
  - a. High carbohydrates ( No protein) feed.
  - b. High carbohydrates moderate fat & Protein feed.
  - c. High calorie – High protein feed.

- Gastrostomy.
- Jejunostomy.
- High protein diet-Composition proteins, calorie, vitamins & Minerals.
- Low protein diet - composition, food stuffs – veg/nonveg.
- High calorie diet- Composition proteins, calorie, vitamins and minerals.
- Low calorie Diet - Composition proteins, calorie, vitamins and minerals.
- Low residue (Fiber) – Composition.
- High residue (Fiber) – Composition.

#### D. Nutritive values:-

- Nutritive values of common foods.
  - Food values on household measures.
- a) Nutritional requirements of different age groups:- (RDA-Definition, ICMR recommendations)
- Age –
- 0-6 Months - Calories & Proteins.
  - 6-12 Months - Calories & Proteins.
  - 1-3 years - Calories & Proteins.
  - 3-6 years - Calories & Proteins.
  - 6-10 years - Calories & Proteins.
  - 10-12 years (Male) - Calories & Proteins.
  - 10-12 years (Female) - Calories & Proteins.
  - Adult male :- Sedentary – Moderate – Heavy life style.
  - Adult Female:- Sedentary, moderate, Heavy, pregnancy& Lactation.
- Nutrition for the aged.
- b) Balanced Diet chart :- The definition, and importance of Balanced diet.
- c) - Ways of measuring growth.
- Relationship of Nutrients and the Growth process.
  - Complications during pregnancy.
  - Complications commonly occurring in late adulthood.
- d) Nutrition for sports and fitness:-
- Fitness and its measurements.
  - Objectives of Nutritional managements.
  - Measurement of Body complications.
  - Methods of measuring energy expenditure.
  - Sources of Energy in the body.
  - Factors affecting fuel utilization.
  - Nutritional requirement of Athletes.
  - Nutritional allowance given by NIN.
  - Broad guidelines for sport persons.
  - Pre competition and post competition meal.
  - Diet & Nutrition for body building.
  - Measurements of Healthy body for Male & Female.

## THEORY - III - DIETICIAN THERAPEUTICS - 2<sup>nd</sup> Year

- Disease Management with Diet prescription:-
  - 1) Dietary requirement & protein energy malnutrition
  - 2) Anemia, its types & dietary management
  - 3) Vitamin deficiency diseases & dietary management
  - 4) Obesity- classification, complication, model diet charts for obesity patients-  
Diet chart-I No fat diet chart
  - 5) Diet during Energy Imbalance- High and Low Calorie Diets:--
    - Energy Balance
    - Definitions, Types and Causes of Obesity
    - Importance of Weight Regulation
    - Diet during Obesity
    - Fad Diets
    - Maintenance Diet
    - Diet for an underweight person
  - 6) Diet for Diabetes Mellitus :--
    - Causes of Diabetes
    - Classification of Diabetes
    - Symptoms of Diabetes
    - Tests for Diabetes
    - Acute Complications of Diabetes
    - Chronic Complications of Diabetes
    - Patient Education
    - Hypoglycaemic Drugs
    - Objectives of Diabetes Management
    - Glycaemic Index
    - Tips for Diabetes
    - The Diabetic Association of India
  - 7) Diet for Cardio-vascular Diseases :--
    - Cardio-vascular diseases
    - Risk Factors
    - Definition of Atherosclerosis
    - Blood Profile Related to Coronary Heart Disease
    - Drugs used in the Treatment of Cardio-Vascular Diseases
    - Dietary Management in Atherosclerosis and Hyperlipidaemia
    - Dietary Management of Acute Diseases of the Heart
  - 8) Diet for Kidney Diseases :--
    - Introduction
    - Kidney function tests
    - Glomerulonephritis
    - Nephrotic Syndrome
    - Chronic renal Failure- Uraemia

- Dialysis
  - Renal Transplantation
  - Urinary Calculi or Kidney Stone
- 9) Diet for Gastro-intestinal Diseases(Stomach and Intestines):--
- Classification of Diseases of the Gastro-Intestinal Tract
  - Indigestion or Dyspepsia
  - Peptic Ulcer
  - Diarrhoea
  - Constipation
  - Ulcerative Colitis
  - Diets Modified in Residue Content

- 10) Diet for Liver Diseases :--
- Life Depends upon the Liver
  - Causes of Liver Diseases and Disorders
  - Liver function tests
  - Clinical Symptoms
  - Nutritional considerations in Liver Diseases
  - Hepatitis
  - Cirrhosis of the Liver
  - Hepatic Coma

- 11) Diet for Infections and Fevers :--
- Defense Mechanisms in the Body
  - Role of Nutrition in Infections
  - Effects of Infection on Body Mechanisms
  - Effects of Infection in Nutrients
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- Definition of Fever
  - Dietary Modification in Infection and Fevers

- 12) Diet in other Health Conditions :--
- Trauma
  - Types of Feedings
  - Nutrition in Pre and Post-operative Care
  - Nutrition in Gout
  - Nutrition in Arthritis
  - Nutrition in Cancer
  - Nutrition and Skin Care
  - Food allergy, Intolerance and Sensitivity
  - Nutrition in Aids(Acquired Immune Deficiency Syndrome)
  - Burns
  - Diet in Inborn Errors of Metabolism.

13) “Diet is Medicine” explain in brief.

14) Diet plan & time management .

### **PRACTICAL - III - DIETICIAN THERAPEUTICS - 1<sup>st</sup> Year**

- Visit to the dietetic department of the hospital (Allopathy & Naturopathy).
- Menu planning using natural foods in general.
- Counselling to the patients about Naturopathic diet.
- Preparation of therapeutic diet & study about its composition.
- Study of diet during illness
- Study of Normal diet.
- Practical demonstration of special feeding methods techniques.
- Study of various diet charts for different age groups.
- Balanced diet- study.
- Preparation of balanced diet with low cost for poor people.
- Practical Record Book.

### **PRACTICAL - III - DIETICIAN THERAPEUTICS - 2<sup>nd</sup> Year**

- Planning of menu for each age group mentioned in theory.
- Menu planning using natural foods & raw foods for patients according to their disease.
- Dietary management for
  - PEM
  - Diarrhoea
  - Anaemia
  - Obesity, etc.
- What is weaning food, preparation of weaning foods.
- Observation of different patients & study their diseases. How they respond to dietary management.
- Preparation of diets of all ailments discussed in theory.
- Planning & preparation of Nutrient rich recipies.
- Practical Record Book.



**LIST OF TOOLS, EQUIPMENTS & FURNITURE REQUIRED  
TO BE AVAILABLE IN THE INSTITUTES**

• Human Skeleton
• Gas & Gas Stove
• Utensils.
• Knives, Dishes, Napkins, spoons etc.
• Clean water for cooking and water purifies.
• Storage place for vegetables, cereals, pulses etc.
• Refrigerator.
• Oven.
• Grinder/Mixer.
• Working tables and chairs.,Dual desk / Benches –As required
<b>List of Raw materials.</b>
• Cereal – products.
• Pulse – product.
• Oils and fat.
• Milk and milk products.
• Vegetables.
• Fruits.
• Condiments and spices.
• Mustard seeds, cumin seeds, Turmeric, Chilly powder, salt etc.
• Sugar and Jaggery.
• Nuts and Dry Fruits.

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