

# SUMANDEEP VIDYAPEETH

(Declared as Deemed to be University under Section 3 of the UGC Act 1956)

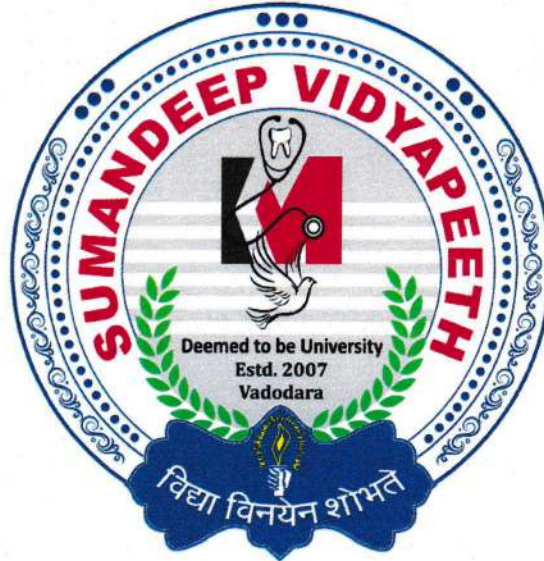
Accredited by NAAC with a CGPA of 3.53 out of four-point scale at 'A' Grade

Category – I deemed to be university under UGC Act - 2018

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## CURRICULUM PG Diploma in CLINICAL NUTRITION

Attested CTC

*Sharan*  
15/2/2021

Vice-Chancellor

Sumandeep Vidyapeeth

An Institution Deemed to be University

Vill. Piparia, Taluka: Waghodia.

Dist. Vadodara-391 760. (Gujarat)

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AMENDED UP TO DECEMBER -2020

## INTRODUCTION

### Scope

The quality of paramedical care has improved tremendously in the last few decades due to the advances in technology, thus creating fresh challenges in the field of healthcare. It is now widely recognized that health service delivery is a team effort involving both clinicians and non-clinicians, and is not the sole duty of physicians and nurses. Professionals that can competently handle sophisticated machinery and advanced protocols are now in high demand. In fact, diagnosis is now so dependent on technology, that paramedical and healthcare professionals are vital to successful treatment delivery.

Effective delivery of healthcare services depends largely on the nature of education, training and appropriate orientation towards community health of all categories of health personnel, and their capacity to function as an integrated team, with a range of skills and expertise, play key roles within the National Health Service, working autonomously, in multi-professional teams in various settings. All of them are first-contact practitioners and work across a wide range of locations and sectors within acute, primary and community care.

### Learning goals and objectives for allied and healthcare professionals

The Department of Clinical Nutrition, SBKS MI & RC endeavors to develop a post graduate diploma Nutritionist who will be able to:

- Gain expertise in Medical Nutrition Therapy and can serve in hospitals, Clinics and community at large.
- Review, assess, and modify nutritional treatment plans and conduct patient assessments and administer treatment plans.
- Understand and apply emerging trends, directions and studies regarding dietary guidelines
- Communicate effectively with individuals and groups, and members of the health team in order to promote effective interpersonal relationship and teamwork.
- Demonstrate skills in teaching to individuals and groups in clinical/community health settings.
- Participate effectively as members of the health team in health care delivery system.
- Demonstrate leadership and managerial skills in clinical/community health settings.
- Provide qualified nutritionist to cope with advancement in medical science and technology.
- Be efficient in teaching to nutrition students as well as providing direct patient care.

This course will fulfill the eligibility requirements for RD Exam for students having B.Sc.( Foods and Nutrition/ Food Sciences/Home Science)

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### Program outcomes

The students of PG Diploma in Clinical Nutrition after the completion of this programme gain expertise in Medical Nutrition Therapy and can serve in hospitals, Clinics and community at large.

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After the completion of programme they are able to review, assess, and modify nutritional treatment plans and conduct patient assessments and administer treatment plans. They are able to understand and apply emerging trends, directions and studies regarding dietary guidelines. They are able to train and develop professionals with expertise in medical nutrition management for services in hospitals and clinics.

### **Ethics and accountability**

Students will understand core concepts of clinical ethics and law so that they may apply these to their practice as healthcare service providers. Program objectives should enable the students to:

- Describe and apply the basic concepts of clinical ethics to actual cases and situations
- Recognize the need to make health care resources available to patients fairly, equitably and without bias, discrimination or undue influence
- Demonstrate an understanding and application of basic legal concepts to the practice
- Employ professional accountability for the initiation, maintenance and termination of patient-provider relationships
- Demonstrate respect for each patient's individual rights of autonomy, privacy, and confidentiality

### **Commitment to professional excellence**

The student will execute professionalism to reflect in his/her thought and action a range of attributes and characteristics that include technical competence, appearance, image, confidence level, empathy, compassion, understanding, patience, manners, verbal and non-verbal communication, an anti-discriminatory and non-judgmental attitude, and appropriate physical contact to ensure safe, effective and expected delivery of healthcare.

### **Eligibility for admission:**

B.Sc.( Foods and Nutrition/ Food Sciences/Home Science) / M.B.B.S. /BDS/ B.H.M.S. / B.A.M.S/B. Pharm /BPT/B.Sc (Biochemistry/Microbiology) / B.Sc (Nursing) or equivalent degrees.

### **Duration of the course:**

Duration of the course is 1 year + 3 months internship.

### **Attendance:**

A candidate has to secure minimum 80% attendance in overall with at least-

1. 75% attendance in theoretical
2. 80% in Skills training (practical) for qualifying to appear for the final examination.

No relaxation whatsoever, will be permissible to this rule under any ground including indisposition etc.

*Sharaney*  
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**Assessment:**

Assessments should be completed by the academic staff, based on the compilation of the student's theoretical & clinical performance throughout the training programme. To achieve this, all assessment forms and feedback should be included and evaluated. Student must attain at least 50% marks in each Theory, Internal assessment and Practical independently / separately for each individual subject.

**Course of Instruction (Choice based credit system)**

Subject code	Subjects	Credits/week				Teaching Hours		
		Lecture (L)	Tutorial (T)/ Clinical training (CT)	Practical (P)/ Research work (RW)	Credits (C)	Lecture /tutorial	Practical	Total Hours
	<b>Core Subjects</b>							
PAPD002.1	Advanced Nutrition	4	-	-	4	60	-	60
PAPD002.2	Medical Nutrition Therapy	3	-	1	4	50	60	110
PAPD002.3	Nutritional Biochemistry	2	-	1	3	30	30	60
PAPD002.4	Human Physiology	2	-	-	2	30	-	30
PAPD002.5	Public Health Nutrition	2	-	2	4	40	60	100
	<b>Elective subjects (To be chosen by student)</b>							
PAPD002.6	Food Service Management	-	-	2	2	-	40	40
PAPD002.6	Health Promotion							
		13	-	06	19	210	190	400
<b>Total credits of program= 210</b>								
<b>Total teaching hours of program=400</b>								

Each student shall select any one elective subject for practical examination. Board of Studies letter no. DPMS/48/2020 dated 17/06/2020, and Notification of Board of Studies letter no. SBKSMI&RC/DEAN/874 dated 24/06/2020 and vide notification of Board of Management resolution ref.No. SVDU.....

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### Scheme of Examination

SUBJECT CODE	SUBJECTS	EXAMINATION PATTERN		
		Internal	Final	TOTAL
<b>Core Subjects</b>				
PAPD002.1	Advanced Nutrition	30	70	100
PAPD002.2	Medical nutrition therapy	30	70	100
PAPD002.3	Nutritional biochemistry	30	70	100
PAPD002.4	Human Physiology	30	70	100
PAPD002.5	Public Health Nutrition	30	70	100
	Lab Course I (MNT)	Practical- 30		50
	Lab course II (Biochemistry)	Viva- 10		50
	Lab Course III (Public Health Nutrition)	Journal- 10		50
<b>Elective Subjects</b>				
PAPD002.6	Food Service Management	Project/Research Report - 30		50
		Presentation- 10		
PAPD002.6	Research Project	Viva - 10		

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## PG Diploma in Clinical Nutrition

**PAPD002.1 Advanced Nutrition**

**60 Hours**

### Unit 1: Pediatric Nutrition

- Growth and Development
- Nutritional Considerations of Infants
- Nutritional Considerations of Children
- Growth Monitoring
- Childhood Obesity
- Under nutrition PEM

### Unit 2: Ageing and Geriatric Nutrition

- Physiological changes
- Bone health
- Osteoporosis
- Rheumatoid Arthritis Osteoporosis
- Nutritional Support

### Unit 3: Nutrient and Drug Interactions

- Basic Concept
- Effect of Nutrition on Drugs
- Drug Effects on Nutritional Status

### Unit 4: Food Intolerances and Food Allergy

- Food Combinations
- Adverse food reactions
- Prevention
- Treatment and Management
- Prevention

### Unit 5: Food Psychology

- Mechanisms of hunger, satiety and satiation
- Nutrition In Eating Disorders
- Anorexia Nervosa
- Bulimia Nervosa
- Binge Eating Disorders, Pica

### Unit 6: Nutrition and Dental Health

- Structure, development and maturation
- Dental caries
- Recent advances in role of Nutrition in dental health

### Unit 7: Nutrition and Neurological Disorders

- Alzheimer's disease
- Epilepsy

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- Migraine
- Multiple Sclerosis
- Neurotrauma
- Spine trauma
- Parkinson's disease
- Feeding problems of patients with neurological disorders.

### Unit 8: Nutrition In Cancer

- Risk factors
- Metabolic Alterations and Nutritional Problems related to Cancer
- Nutritional requirements of Cancer patients related to Cancer Therapy
- Cancer Prevention

## PAPD002.2 Medical Nutrition Therapy (MNT)

110 Hours

### Unit 1: Normal and Therapeutic Diets

- Basic Concepts of
- Normal Diet
- Nutrition through life cycle
- Physiological conditions
- Therapeutic Adaptation of Normal Diet
- Routine Hospital Diets
- Special feeding methods

### Unit 2: Nutrition and Infection

- Metabolic changes during infection
- Typhoid fever
- Tuberculosis
- HIV Infection and AIDS

### Unit 3: MNT in Obesity And Underweight

- Causes
- Health Risk
- Dietary Treatment
- Psychotherapy

### Unit 4: MNT in Diseases Of Gastro Intestinal Tract

- Common Intestinal Disorders -
- Gastritis, GERD, Peptic Ulcer
- Ulcerative colitis
- Inflammatory Bowel Diseases

### Unit 5: MNT in Liver disease

- Hepatitis
- Cirrhosis of Liver
- Diseases of Gall Bladder
- Diseases of Pancreas

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### Unit 6: MNT in Kidney Diseases

- Glomerulonephritis
- Nephrotic Syndrome
- Acute Renal Failure,
- Chronic Renal Failure
- End Stage Liver Diseases
- Urolithiasis

### Unit 7: Diseases Of Metabolic Disorders

- Diabetes Mellitus
- Gout

### Unit 8: MNT in Cardiovascular Diseases

- Coronary Heart Diseases (CHD)
- Prevalence
- Risk Factors
- Pathophysiology
- Dyslipidemia
- Atherosclerosis
- Hypertension
- Angina Pectoris
- Myocardial infarction
- Congestive Cardiac Failure

### Lab course:

- Standardization of recipes and portion sizes
- Dietetic techniques patient counseling
- Preparation of therapeutic diets
- High risk management
- Diet in gastro intestinal diseases
- Diet in liver diseases
- Diet in cardiovascular diseases
- Diet in Kidney Diseases
- Diet in disease of metabolic disorder such as Diabetes mellitus and gout
- Diet in Stress, Burns, cancer, surgery
- Techniques for obtaining relevant information- patient history, individual and group counseling
- Developing IEC ,Formulation of Nutritional messages
- Clear liquid diet, full fluid, soft and normal diet.
- Elemental diets, parental and enteral nutrition
- Formulation of diets
- Low cholesterol and Low sodium diet for CVD, hypertension, Progressive diet modification for cardiac surgeries.

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ES and mineral modification in renal diseases

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**Unit 1: Carbohydrates**

- Definition
- classification, biological role of carbohydrates
- Metabolism- Digestion and absorption, Glycolysis, Krebs cycle, Electron Transport Chain, Gluconeogenesis, Glycogenesis, Glycogenolysis, HMP pathway
- Disorders related to Carbohydrate metabolism.

**Unit 2: Proteins**

- Definition, classification, biological role of amino acids and proteins
- Biological value of protein,
- Metabolism- Digestion and absorption, Transamination, Deamination, Metabolism of
- Ammonia, Urea cycle ,
- Disorders related to Protein/amino acid metabolism

**Unit 3: Lipids**

- Definition, classification, biological role of fatty acids and lipids
- Metabolism- Digestion and absorption , Oxidation of Fatty acids, Metabolism of
- lipoproteins and ketone bodies and their significance Cholesterol metabolism
- Disorders related to Lipid metabolism

**Unit 4: Vitamins**

- Definition
- Classification, functions
- Role of vitamins in metabolism, deficiency diseases.

**Unit 5: Minerals**

- Definition
- Classification, functions
- Role of minerals in metabolism, deficiency diseases

**Unit 6: Water and Electrolyte balance**

Water and Electrolyte balance and related disorders

**Unit 7: Acid Base balance**

Acid Base balance- Role of buffers, lungs and kidney in maintaining acid base and related disorders

**Unit 8: Enzymes**

- Definition
- Classification
- mechanism of enzyme action, specificity of enzymes
- Types of enzymes
- Factors affecting enzyme activity, Coenzymes
- Enzymes in clinical diagnosis.

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## Lab Course:

- Estimation of serum calcium
- Estimation of Blood Glucose
- Estimation of Blood Urea
- Estimation of Serum Creatinine
- Estimation of Bilirubin
- Estimation of Serum protein
- Estimation of Hemoglobin
- Urine analysis
- Estimation of SGOT
- Estimation of SGPT

## PAPD002.4 Human Physiology

30 Hours

### Unit 1: Digestive System

Brief study of the anatomical organization of the digestive tract and process of digestion, absorption and assimilation of food

### Unit 2: Circulatory System

Heart Structure and working of heart, Determination of Blood pressure, Cardiac cycle, cardiac output, heart rate Lymphatic system-Composition & Formation, organs involved, functions of lymph

### Unit 3: Hematology

Introduction to blood, Composition and functions of blood, Mechanism of blood coagulation, blood group systems

### Unit 4: Defense mechanisms of the body

First line, second and third line of defense, active immunity, passive immunity, Factors affecting immunity

### Unit 5: Respiratory System

Basic anatomy of the respiratory system, Process of respiration, Disorders

### Unit 6: Urinary System

Structure and functions of organs of urinary system, Composition of normal and abnormal urine

### Unit 7: Endocrine system

Definition, Classification, Mechanism of action, functions and disorders of hormones of pituitary gland, thyroid gland, parathyroid gland, adrenal gland and pancreas

### Unit 8: Nervous system

- Structure of Neuron, Transmission of nerve impulse
- Organs of Central Nervous system & their functions
- Peripheral Nervous system

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- Autonomous system
- Reflex action

## PAPD 002.5 Community Nutrition

100 Hours

### Unit 1: Public Health Nutrition

- Concept
- Scope
- Future projections
- Health care
- Role of public nutritionists in health care delivery

### Unit 2: Nutritional Problems in India

- Protein Energy Malnutrition- Kwashiorkar and Marasmus
- Micronutrient Deficiencies –Anemia, IDD, Fluorosis
- Vitamin Deficiencies

### Unit 3: Assessment Of Nutritional Status

- Population sampling
- Anthropometry
- Clinical assessment
- Biochemical assessment
- Dietary assessment

### Unit 4: Nutrition Monitoring And Nutrition Surveillance

- Nutrition Monitoring and its Current programmes
- Nutrition Surveillance System

### Unit 5: National Nutrition Programmes

- Integrated Child Development Services (ICDS) Programme
- Nutrient Deficiency Control Programme
- Supplementary Feeding Programme
- Food Security Programme Strategies to Combat National Nutritional Problems

### Unit 6: Nutrition and Health Education

- Definition
- Importance
- Channels of nutrition education
- Nutrition education methods
- Planning for Nutrition and Health Education
- Techniques of Nutrition Education
- Role of Nutrition Education Programs in eradication of malnutrition

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Practical:

- Assessment of Nutritional Status
- Measuring, recording and plotting on growth charts
- Use of growth reference/standards (field work)

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- IYCF
- Diet Survey
- Developing IEC ,Formulation of Nutritional messages for community awareness( human values)
- individual and group counseling- Anemia, NCDs, malnutrition

## PAPD 002.6 Food Service Management

40 Hours

### Unit 1: Food Service Management

- Types of Food service establishments
- Principles of Management
- Functions of Management
- Planning of a layout

### Unit 2: Menu Planning

- Importance of menu planning
- Types of menu planning
- Steps in menu planning and its evaluation

### Unit 3: Food Purchasing and Storeroom Management

- Mode of purchasing
- Methods of purchasing
- Receiving
- Storage Space
- Storage Room Management

### Unit 4: Food Production- Planning and Control

- Production Forecasting
- Production Scheduling
- Production Control
- Standardized Recipes

### Unit 5: Quantity Food Production

- Basic cookery procedures
- Types of Equipments

### Unit 6: Food Delivery And Service Systems

- Methods of food delivery systems
- Centralized and decentralized
- Types of food service systems

### Unit 7: Personnel Management

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- Leadership
- Functions and qualities of leadership
- Manpower Planning,
- Recruitment and Selection,
- Placement and Induction,

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- Performance Appraisal,
- Training and development.

## Unit 8: Food Hygiene and Sanitation

- Sanitation in food services
- 3E's of safety
- Food safety
- Hygienic food handling

## CODE OF PROFESSIONAL CONDUCT

### INTRODUCTION

The Code of Professional Conduct is designed and set out as guidance for the clinical practitioner within the relationship that exists with every patient receiving health care.

Essential to that relationship is the patient's trust in the practitioner. This trust hangs upon the patient's assurance of being the practitioner's first concern during their clinical encounter, and upon the patient's confidence that the care received will be competent, whether in diagnosis, therapy or counseling.

### STANDARD OF PRACTICE AND CARE

Patients are entitled to the highest standard of practice and care. The essential elements of this are professional competence, good relationships with patients and colleagues and observance of professional ethical obligations.

### In providing care you must therefore:

- Recognize the limits of your professional competence.
- Be willing to consult colleagues
- Keep clear, accurate and contemporaneous patient records which report the relevant findings.
- Keep colleagues informed.
- Pay due regard to the efficacy and the prudent use of resources.
- Be competent, truthful, and accurate, when reporting on investigations.
- Be competent when giving or arranging treatment.

### Patient's rights

- Listen to patients and respect their views.
- Treat patients politely and considerately

*Attested CTC*  
*Sharanam*  
*15/2/2021*

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- Respect patients' privacy and dignity.
- Give information to patients in a way they can understand.
- Respect the right of patients to be fully involved in decisions about their care.
- Respect the right of patients to refuse treatment or to take part in teaching or research, reporting the refusal to the person requesting the procedure.
- Respond to complaints promptly and constructively.
- Ensure that your views about a patient's life style, culture, beliefs, race, colour, sex, sexuality, age, social status, or perceived economic worth, do not prejudice the service you give.

### **CONFIDENTIALITY**

Patients have a right to expect that you will not pass on any personal information which you learn in the course of your professional duties, unless they agree

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