GOKHALE MEMORIAL GIRLS COLLEGE

CLINICAL NUTRITION & DIETETICS

(4 YEAR UG VOCATIONAL COURSE)

Course Outcome (CO), Programme Outcome (PO), Programme Specific Outcome (PSO) (upto 4th semester)

(as per NEP curriculum)

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Manage Diet-Related Disorders

Utilize evidence-based dietary strategies to manage chronic and acute diet-related disorders such as diabetes, cardiovascular diseases, renal disorders, gastrointestinal issues, and malnutrition.

PSO 2: Ensure Food Safety & Detect Food Adulteration

Graduates will gain practical skills and theoretical understanding of food sanitation, hygiene, and quality control, enabling them to assess food safety risks and implement best practices in food handling and storage. They will be able to perform laboratory techniques for analysing nutrient content and identifying food adulterants for food quality monitoring.

PSO 3: Engage in Research and Evidence-Based Practice

Develop competence in nutritional research methods, data analysis, and scientific writing to contribute to the advancement of clinical nutrition knowledge and practice.

PSO 4: Promote Public Health and Preventive Nutrition

Plan and participate in nutrition education, health promotion, and disease prevention programs targeting diverse populations to improve public health outcomes.

PSO 5: Development of Entrepreneur Skills

Establish a start-up in area of interest and expertise.

SEMESTER WISE COURSE DISTRIBUTION (1st to 4th SEMESTER)

SEM	COURSE CODE	COURSE NAME	COURSE DESCRIPTION
I	DSCC-1	Basic Nutrition	Nutrition Basics, Nutrition & Health, Food Guide, Nutrient Utilization, Water, Carbohydrate, Fats & Oils, Proteins, Energy, Acid Base Balance
	SEC-1	Food Sanitation and Hygiene	Microorganisms & Sanitation, Chemical Hazards, Contamination Sources, Personal Hygiene, Food Safety, Cleaning & Disinfection, Infestation Control, Sanitation Training & Inspection, Research Project on personal & Environmental Hygiene
II	DSCC-2	Advanced Nutrition	Vitamins, Minerals, Moisture Content of Food.
	SEC-2	Food Safety and Quality Control	Microorganisms & Sanitation, Personal Hygiene & Contamination, Food Safety & Spoilage, Food Adulteration, Food Laws & Standards
III	DSCC-3	Basic Human Physiology	Animal Cell, Tissues, Digestive System, Use of Microscope, Determination of (Pulse, Blood Pressure, Bleeding Time & Coagulation Time, Bood Group & Rhesus Factor)
	DSCC-4	Food Commodities	Cereals & Pulses, Milk & Milk Products, Eggs, Fish, Vegetables & Fruits, Raising Agents, Food Adjuncts, Beverages, Detection of Food Adulterants
	SEC-3	Food Preservation	Basics of Food Preservation, Preserved Products, Sugar & Sugar Products, Fats & Oils, Raising Agents, Food Adjuncts, Convenience Foods, Salts
IV	DSCC-5	Advanced Human Physiology	Lymphatic System, Respiratory System, Excretory System, Sense Organs, Reproductive System, Endocrine System, Identification of Blood Parameters, ESR, Physiological Impact of Exercise, Histological Study of Tissues, Tissue Slide Identification.
	DSCC-6	Nutritional Biochemistry- I	Introduction to Biochemistry, Molecular aspect of Transport, Biological Oxidation, Genetic Control of Metabolism, Quantitative & Qualitative Analysis of Carbohydrates, Fat Analysis, Estimation of Blood Parameters- Glucose, Lipid Profile & Proteins.
	DSCC-7	Family Meal Management	Introduction to Meal Management, Diet Planning, Growth & Development, Nutrition During Various Stages of Life
	DSCC-8	Dietetics- I	Basic Concepts, Routine Hospital Diets, Nutrition for: Infection, Obesity, Underweight, GI Tract Disorders & Allergy, Therapeutic Diet Planning

PROGRAMME OUTCOMES (PO) FOR DIFFERENT COURSES

COURSE CODE: DSCC-I

COURSE NAME: Basic Nutrition

CO1: Define and explain the fundamental concepts of nutrition, including nutrients, their functions, sources, and daily requirements.

CO2: Describe the process of digestion, absorption, and metabolism of nutrients in the human body.

CO3: Classify various nutrients and analyze their roles in maintaining health.

CO4: Apply principles of biochemical testing to identify fundamental biomolecules in a laboratory setting.

CO5: Interpret experimental results to distinguish among various classes of biomolecules based on their chemical properties.

PO-PSO-CO MAPPING

Course Code: DSCC-1		CO1	CO2	CO3	CO4	CO5
PO1	Complex problem-solving	L	M	M	H	H
PO2	Critical thinking	M	H	H	H	H
PO3	Creativity	–	–	–	M	M
PO4	Communication Skills	–	–	M	M	M
PO5	Analytical reasoning/thinking	M	H	H	H	H
PO6	Digital and technological skills	–	–	–	M	M
PO7	Value inculcation (Ethical values)	–	–	M	–	–
PO8	Environmental awareness and action	–	–	M	–	–
PSO1		H	H	H	M	M
PSO2		M	M	M	H	H
PSO3		–	M	H	H	H
PSO4		H	H	H	–	–
PSO5		–	–	–	M	M

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: SEC-1

COURSE NAME: Food Sanitation & Hygiene

CO1: Explain the role of microorganisms and environmental factors in food contamination, spoilage, and foodborne illnesses, and identify associated biological, chemical, and physical hazards with their transmission routes and health risks.

CO2: Apply appropriate methods of cleaning, disinfection, and sterilization in food environments, and assess the effectiveness of sanitizing agents and hygiene procedures.

CO3: Demonstrate the ability to assess personal and environmental hygiene practices among food handlers using systematic observation and data collection tools.

CO4: Design and implement hygiene and sanitation interventions to improve food safety standards in informal and street food service settings.

CO5: Analyze the impact of hygiene interventions using basic research tools and effectively communicate findings through structured reports and presentations.

PO-PSO-CO MAPPING

Course Code: SEC - 1		CO1	CO2	CO3	CO4	CO5
PO1	Complex problem-solving	H	H	H	H	H
PO2	Critical thinking	H	H	H	H	H
PO3	Creativity	M	M	M	H	H
PO4	Communication Skills	M	L	M	H	H
PO5	Analytical reasoning/thinking	H	H	H	H	H
PO6	Digital and technological skills	M	H	H	M	M
PO7	Value inculcation (Ethical values)	H	H	M	H	H
PO8	Environmental awareness and action	H	H	H	H	H
PSO1		M	M	M	M	M
PSO2		H	H	H	H	H
PSO3		H	H	H	H	H
PSO4		H	H	H	H	H
PSO5		L	L	L	M	L

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: DSCC-2

COURSE NAME: ADVANCED NUTRITION

CO1: Explain the physiological roles, dietary sources, requirements, bioavailability, deficiency symptoms, and toxicities of essential minerals including calcium, iron, iodine, fluorine, sodium, and potassium.

CO2: Classify vitamins and describe their functions, sources, units of measurement, deficiency disorders, and toxic effects, with specific focus on fat-soluble (A, D, E, K) and water-soluble (C, B-complex) vitamins.

CO3: Apply practical techniques to determine the ash and moisture content in food samples and interpret their nutritional relevance and quality indicators.

CO4: Demonstrate analytical proficiency in estimating calcium, iron, and vitamin C content in food items using appropriate biochemical methods.

CO5: Integrate theoretical knowledge of micronutrients with laboratory findings to assess the nutritional quality of food and its implications for public health and dietary planning

PO-PSO-CO MAPPING

Course Code: DSCC-2		CO1	CO2	CO3	CO4	CO5
PO1	Complex problem-solving	H	H	M	H	H
PO2	Critical thinking	H	H	M	M	H
PO3	Creativity	M	M	L	L	M
PO4	Communication Skills	M	M	L	L	M
PO5	Analytical reasoning/thinking	H	H	M	M	H
PO6	Digital and technological skills	M	M	H	H	M
PO7	Value inculcation (Ethical values)	M	M	L	L	M
PO8	Environmental awareness and action	M	M	M	M	M
PSO1		H	H	M	H	H
PSO2		M	M	H	H	M
PSO3		M	M	H	H	H
PSO4		H	H	M	M	H
PSO5		L	L	M	M	M

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: SEC-2

COURSE NAME: FOOD SAFETY AND QUALITY CONTROL

CO1: Explain the role of microorganisms in sanitation, food spoilage, and foodborne illnesses, and assess their impact on food quality and human health.

CO2: Evaluate the significance of personal hygiene, food handler practices, and environmental sanitation in preventing food contamination and ensuring food safety.

CO3: Define food safety, identify key factors affecting it—including food spoilage control and safe handling of leftovers—and recognize common food adulterants and their implications on health.

CO4: Classify different types of food adulterants found in commonly consumed foods, understand the reasons for adulteration, and demonstrate basic analytical skills to detect them in fats, oils, ghee, milk, sugar, spices, fruit juices, and sweets.

CO5: Interpret and apply key national and international food laws and standards (e.g., Codex Alimentarius, PFA, Agmark, FPO, MPO, BIS, FSSAI) in ensuring food safety, regulation, and quality control.

PO-PSO-CO MAPPING

Course Code: SEC-2		CO1	CO2	CO3	CO4	CO5
PO1	Complex problem-solving	H	H	H	H	H
PO2	Critical thinking	H	H	H	H	H
PO3	Creativity	L	L	L	L	M
PO4	Communication Skills	L	L	L	L	L
PO5	Analytical reasoning/thinking	H	H	H	H	H
PO6	Digital and technological skills	L	M	L	L	M
PO7	Value inculcation (Ethical values)	H	H	H	H	H
PO8	Environmental awareness and action	H	H	H	H	H
PSO1		M	L	M	M	M
PSO2		H	H	H	H	H
PSO3		L	L	L	L	L
PSO4		H	H	H	H	H
PSO5		L	L	L	L	L

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: DSCC-3

COURSE NAME: BASIC HUMAN PHYSIOLOGY

CO1: Describe the structure and functions of animal cells and human tissues, and explain common tissue-related disorders such as dermatitis, burns, and dandruff.

CO2: Explain the organization and functions of major physiological systems—including the nervous, muscular, circulatory, and digestive systems—and analyze their roles in maintaining homeostasis and health.

CO3: Discuss the mechanisms of nerve impulse conduction, muscular contraction, cardiac function, ECG interpretation, and common disorders related to the nervous, muscular, and circulatory systems.

CO4: Describe the digestion and absorption of macronutrients, major metabolic pathways, and associated gastrointestinal disorders, emphasizing their relevance in nutrition and physiology.

CO5: Apply essential laboratory techniques in physiology, including microscopic tissue identification, blood analysis, and physiological measurements such as pulse, blood pressure, and clotting time.

PO-PSO-CO MAPPING

	Course Code: DSCC-3	CO1	CO2	CO3	CO4	CO5
PO1	Complex problem-solving	M	H	H	H	H
PO2	Critical thinking	H	H	H	H	H
PO3	Creativity	L	L	L	M	M
PO4	Communication Skills	M	M	M	M	M
PO5	Analytical reasoning/thinking	H	H	H	H	H
PO6	Digital and technological skills	L	M	M	L	H
PO7	Value inculcation (Ethical values)	L	-	-	M	L
PO8	Environmental awareness and action	-	M	-	M	-
PSO1		H	H	H	H	H
PSO2		L	-	-	L	M
PSO3		M	H	H	M	H
PSO4		M	H	M	H	M
PSO5		-	-	-	-	M

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: DSCC-4

COURSE NAME: FOOD COMMODITIES

CO1: Understand the types, processing, nutritional value, and culinary uses of key food commodities – including cereals, millets, pulses, legumes, milk and milk products, eggs, meat, poultry, fish, vegetables, and fruits.

CO2: Evaluate the principles of food selection, storage, spoilage, and preservation techniques across various food groups to ensure quality and safety.

CO3: Analyze the roles and applications of food adjuncts and raising agents in culinary and bakery preparations, along with their safe handling.

CO4: Assess the nutritional significance, processing, and cost aspects of common beverages like tea, coffee, cocoa, fruit juices, and carbonated drinks.

CO5: Detect food adulterants using standard tests and understand their impact on health, food quality, and safety.

PO-PSO-CO MAPPING

Course Code: DSCC-4		CO1	CO2	CO3	CO4	CO5
PO1	Complex problem-solving	M	H	M	M	H
PO2	Critical thinking	H	H	H	M	H
PO3	Creativity	M	M	H	H	L
PO4	Communication Skills	L	M	L	L	L
PO5	Analytical reasoning/thinking	H	H	H	M	H
PO6	Digital and technological skills	M	M	M	M	H
PO7	Value inculcation (Ethical values)	-	M	M	M	H
PO8	Environmental awareness and action	H	H	M	L	H
PSO1		H	H	M	L	H
PSO2		M	H	M	L	H
PSO3		-	-	-	-	M
PSO4		M	H	L	M	M
PSO5		L	L	M	H	L

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: SEC-3

COURSE NAME : FOOD PRESERVATION

CO1: Explain the principles, methods, and objectives of traditional and modern food preservation techniques, and evaluate their role in enhancing shelf-life, safety, and nutritional value of food products.

CO2: Demonstrate knowledge of composition, processing, and preservation of various food groups—including sugar products, fats and oils, convenience foods, and food adjuncts considering nutritional, economic and cultural factors.

CO3: Demonstrate practical skills in the preservation of seasonal fruits and vegetables**.**

CO4: Apply practical skills in the selection, preparation, and storage of preserved foods, such as jams, jellies, chutneys, sauces, and pickles, integrating cost-effectiveness and quality standards.

PO-PSO-CO MAPPING

Course Code: SEC-3		CO1	CO2	CO3	CO4
PO1	Complex problem-solving	H	M	M	M
PO2	Critical thinking	H	H	M	M
PO3	Creativity	M	M	L	H
PO4	Communication Skills	L	L	L	M
PO5	Analytical reasoning/thinking	H	H	M	H
PO6	Digital and technological skills	M	M	H	H
PO7	Value inculcation (Ethical values)	M	M	M	M
PO8	Environmental awareness and action	H	M	M	M
PSO1		H	M	M	M
PSO2		H	H	H	H
PSO3		M	M	-	-
PSO4		H	M	M	M
PSO5		M	H	H	H

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: DSCC-5

COURSE NAME: ADVANCED HUMAN PHYSIOLOGY

CO1: Explain the structure and function of major human physiological systems including the lymphatic, respiratory, excretory, reproductive, sensory, and endocrine systems, and identify common associated disorders.

CO2: Demonstrate an understanding of hormonal regulation and homeostasis, including the physiological processes of reproduction, metabolism, and response to internal and external stimuli.

CO3: Apply laboratory skills to analyze blood parameters and tissues, including cell counts, hemoglobin levels, ESR, histological identification, and assess the physiological impact of exercise**.**

CO4: Identify and interpret histological features of human tissues and organs through microscopic examination and prepared slide identification.

PO-PSO-CO MAPPING

Course Code: DSCC-5		CO1	CO2	CO3	CO4
PO1	Complex problem-solving	H	H	H	M
PO2	Critical thinking	H	H	M	M
PO3	Creativity	L	M	L	L
PO4	Communication Skills	L	M	L	L
PO5	Analytical reasoning/thinking	H	H	H	H
PO6	Digital and technological skills	M	M	H	H
PO7	Value inculcation (Ethical values)	M	M	L	L
PO8	Environmental awareness and action	H	M	M	M
PSO1		H	H	H	M
PSO2		M	M	H	M
PSO3		M	H	H	H
PSO4		H	M	M	L
PSO5		L	L	M	L

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: DSCC-6

COURSE NAME: NUTRITIONAL BIOCHEMISTRY -I

CO1: Explain the scope and interdisciplinary nature of biochemistry, emphasizing its significance in nutrition and metabolism, and its connection with other biological sciences.

CO2: Describe and interpret cellular biochemical processes including nutrient transport, biological oxidation, genetic control of metabolism, and the role of nucleic acids and genetic engineering in biotechnology.

CO3: Perform qualitative and quantitative analyses of carbohydrates and fats, including tests for sugars (glucose, lactose, starch) and lipid quality parameters (acid value, iodine value, saponification value), and interpret their nutritional significance.

CO4: Analyze key biochemical markers in blood such as glucose, triglycerides, cholesterol, and plasma proteins to evaluate metabolic health and nutritional status.

PO-PSO-CO MAPPING

Course Code: DSCC-6		CO1	CO2	CO3	CO4
PO1	Complex problem-solving	M	H	H	H
PO2	Critical thinking	H	H	M	H
PO3	Creativity	M	M	L	L
PO4	Communication Skills	M	M	L	M
PO5	Analytical reasoning/thinking	H	H	H	H
PO6	Digital and technological skills	M	H	H	M
PO7	Value inculcation (Ethical values)	M	M	L	M
PO8	Environmental awareness and action	M	M	M	M
PSO1		H	H	H	H
PSO2		M	M	H	H
PSO3		H	H	H	H
PSO4		M	M	M	M
PSO5		L	M	M	M

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: DSCC-7

COURSE NAME: FAMILY MEAL MANAGEMENT

CO1: Understand and apply the principles of balanced diet, food groups, dietary guidelines, and meal planning using RDA, EAR, AI, TUL, and exchange lists.

CO2: Assess nutritional needs across different life stages—infancy to old age—including pregnancy, lactation, and adolescence, considering physiological changes and growth patterns.

CO3: Plan and prepare balanced diets tailored to age, activity level, physiological conditions, and economic status across the life cycle.

CO4: Apply practical skills and nutritional knowledge to address dietary needs of different population groups and special conditions.

PO-PSO-CO MAPPING

Course Code: DSCC-7		CO1	CO2	CO3	CO4
PO1	Complex problem-solving	H	H	H	H
PO2	Critical thinking	H	H	M	H
PO3	Creativity	M	M	H	M
PO4	Communication Skills	M	M	M	M
PO5	Analytical reasoning/thinking	H	H	H	H
PO6	Digital and technological skills	M	M	M	M
PO7	Value inculcation (Ethical values)	M	M	M	H
PO8	Environmental awareness and action	M	M	M	M
PSO1		H	H	H	H
PSO2		M	M	M	M
PSO3		M	M	M	M
PSO4		H	H	H	H
PSO5		M	M	H	H

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-

COURSE CODE: DSCC-8

COURSE NAME: **DIETETICS-I**

CO1: Understand principles and classifications of therapeutic diets and their role in clinical nutrition and patient recovery.

CO2: Apply knowledge of feeding methods including oral, enteral, and parenteral nutrition in managing patient care.

CO3: Assess and plan dietary modifications for common health conditions such as obesity, GI disorders, food allergies and infections.

CO4: Demonstrate practical skills in planning and preparing therapeutic diets with modified nutrients, consistency, and cost considerations.

PO-PSO-CO MAPPING

Course Code: DSCC-8		CO1	CO2	CO3	CO4
PO1	Complex problem-solving	H	H	H	H
PO2	Critical thinking	H	H	H	M
PO3	Creativity	M	L	M	H
PO4	Communication Skills	M	M	M	M
PO5	Analytical reasoning/thinking	H	H	H	H
PO6	Digital and technological skills	M	H	M	M
PO7	Value inculcation (Ethical values)	M	M	H	M
PO8	Environmental awareness and action	M	M	M	M
PSO1		H	H	H	H
PSO2		M	H	M	M
PSO3		M	M	M	M
PSO4		H	H	H	H
PSO5		M	M	M	H

Mapping Correlation:

High	Medium	Low	No correlation
H	M	L	-