



### B.Sc IN NUTRITION

#### PROGRAMME OUTCOME (PO): COURSE OUTCOME (CO) AND PROGRAMME SPECIFIC OUTCOME

PO	Summary	Description
PO1	Interdisciplinary Knowledge	Apply the knowledge of nutrition, dietetics, food sciences, nutritional physiology, nutritional biochemistry, nutritional biophysics, research methodology, statistics, epidemiology, demography, immunology, molecular biology, nutrigenomics, metabolomic and epigenetic to the solution of health problems.
PO2	Problem Analysis	Identify, formulate, research literature, and analyze complex health problems and searching out the solutions by applying the modified foods and nutrients to mitigate the problems.
PO3	Conduct Investigations of Complex Problems	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions regarding nutrition solving diseases.
PO4	Modern Tool usage	Food is first line medicine, the nutritional sciences have long benefited from the intellectual and pragmatic input of ideas and techniques from other medicinal and pharmaceuticals disciplines.
PO5	The Nutritionist and Society	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional dietitian practice.
PO6	Ethical Values	Students will be able to discuss the ethical implications of our understanding of nutrition and nutritional discoveries and to develop the culture of value-based thinking, understand the pros and cons while taking decisions, and lead a sound value based ethical life.
PO7	Research & Life-long Learning	Students will be able to demonstrate a depth of knowledge within their area of study and a breadth of knowledge across the field of nutrition. Students will be able to design and complete a research study and/or scientific experiments.
PO8	Familiarity with Recent Developments	Students will be able to gathered recent knowledge in different practical techniques regarding nutrigenomics.
PO9	Ability in Creative Skills	Students will be able to discuss and practice professional standards of scientific inquiry and responsible conduct of scientists that are essential for the pursuit of new knowledge. Students will be able to process and analyze data to make sound interpretations.
PO10	Environmental Awareness & Sustainability	Students will be able to understand and aware the importance of environment in our life. Students will be able to understand and aware the community regarding the environmental pollution and their management. A beautiful forest-like campus that provides gorgeous scenery, and a quiet and comfortable learning environment.



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## Department of Nutrition

Course Title: Basic Nutrition (Theory)

Course Code: C1T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Deals with understanding of food groups, nutrients, Nutrition & health, metabolism & acid base balance of body, energy.	PO1 , PO2, PO4,
CO 2	Able to describe interrelationship between nutrition and health	PO1 , PO2, PO4,
CO 3	Understand formulation of RDA	PO1
CO 4	Study nutrition for athletics and sports	PO4, PO8
CO 5	Gain basic idea in food sanitation and health	PO1 , PO2, PO4, PO5,

Course Title: Basic Nutrition (Practical)

Course Code: C1P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Acquire skills on preparation of food and classifying recipes	PO1 , PO2, PO4, PO5
CO 2	Learn how to use and care kitchen equipments	PO1 , PO2, PO5

Course Title: Food Science and food commodity (Theory)

Course Code: C2 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Understand the classification of food and nutrients.	PO1 , PO2, PO4, PO5, PO7, PO8
CO 2	Gain of knowledge on macro and micro nutrients, their function, classification, importance and source.	PO1 , PO2, PO3,
CO 3	Study of various food items and additives.	PO1 , PO2, PO3, PO4, PO5
CO 4	Understand the major chemical reactions that occur during food preparation and storage	PO1 , PO2, PO3, PO4, PO5, PO10
CO 5	Able to describe the techniques that can be used to monitor quality of raw ingredients and final products.	PO1 , PO2, PO4,
CO 6	Able to Understand the importance of colour and variety in diet.	PO1, PO5
CO 7	Learn about food standards.	PO1, PO6



Course Title: Nutritional Biochemistry (Practical)

Course Code: C2P2

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Acquire skills on preparation of solutions	PO1, PO9
CO 2	Colorimetric estimation of biochemical molecules	PO1, PO7
CO 3	Learn how to estimate total nitrogen of food through kjeldhal method	PO1, PO7

Course Title: Nutritional Biophysics and Biochemistry (Theory)

Course Code: C3T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Students will understand the principles of biochemistry and also Chemistry of major nutrients.	PO1, PO7
CO 2	Capable of describing biochemical pathways relevant in nutrient metabolism	PO1, PO7
CO 3	Get general idea of biophysics in nutrition, different processes and their nutritional importance	PO1, PO7
CO 4	Gain knowledge on Enzymology	PO1, PO7
CO 5	Able to Understand the electrolyte and acid base balance	PO1, PO7

Course Title: Nutritional Biophysics and Biochemistry (Practical)

Course Code: C3P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Acquire skills on preparation of buffer solutions	PO1, PO2, PO4, PO5
CO 2	Able to understand electrophoresis and dialysis	PO1, PO2, PO4, PO5

Course Title: Human Physiology (Theory)

Course Code: C4T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Helps in basic understanding of structure and function of animal cell and various tissues in our body, human digestive system.	PO1, PO2, PO4, PO5
CO 2	Gain of knowledge on different parts of the body.	PO1, PO2, PO4, PO5



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CO 3	Able to understand the physiological processes and functions as applicable to human nutrition.	PO1, PO7
CO 4	Gain knowledge on Human reproduction	PO1, PO7

Course Title: Human Physiology (Practical)

Course Code: C4P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Gain knowledge on different tissues, muscles and organs of the body.	PO1 , PO5, PO7, PO8
CO 2	Learn how to measure Blood pressure and check pulse.	PO5, PO7, PO8
CO 3	Able to understand how to prepare blood film and estimate blood components	PO1 , PO2, PO4, PO5,

Course Title: Family meal management and meal planning (Theory)

Course Code: C5T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Gain knowledge on changes during various stages of growth and development throughout life cycle.	PO1 , PO2, PO4, PO5,
CO 2	Thorough understanding of basis of human nutritional requirements and recommendations throughout human life cycle.	PO1 , PO2, PO4, PO8
CO 3	Learn about nutritional demand for different sport and special diet for space	PO1 , PO2, PO4, PO5,
CO 4	Acquire knowledge on Indian meal pattern and meal planning for the family	PO1 , PO2, PO3, , PO10
CO 5	Capable of describing food faddism and nutritive value of common Indian recipes	PO1 , PO2, PO3, PO10

Course Title: Family meal management and meal planning(Practical)

Course Code: C5P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Practically gain knowledge to plan diet for each stage of life according to the guidelines for dietary needs.	PO1 , PO2, PO3, PO10
CO 2	Understand how to Prepare diet foreach stage of life	PO1 , PO2, PO3, PO10



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Course Title: Community Nutrition and Nutritional Epidemiology (Theory)

Course Code: C6T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Assess the nutritional status of the community.	PO1 , PO5, PO7, PO8
CO 2	Addressing the nutrition problems in the community through proper evaluation.	PO1 , PO2, PO4, PO5
CO 3	role of various national and international agencies in community nutrition and recent advances in community nutrition research.	PO1 , PO2, PO4, PO8
CO 4	Gain knowledge on national nutritional intervention programmes to combat malnutrition	PO1 , PO2, PO4, PO5, PO8
CO 5	Acquire knowledge on nutritional epidemiology	PO1 , PO2, PO4, PO5,

Course Title: Community Nutrition and Nutritional Epidemiology(Practical)

Course Code: C6P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Practically gain knowledge on diet survey	PO1 , PO2, PO3, PO4, PO9, PO10
CO 2	Learn how to prepare visual aids for nutrition awareness or surveillance	PO1 , PO2, PO3, PO8

Course Title: Basic Dietetics (Theory)

Course Code: C7T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Get a clear idea about roll of a dietician	PO1 , PO2, PO3, PO4, PO9
CO 2	understand the basic principles of diet and diet therapy.	PO7, PO8, PO9
CO 3	acquire the knowledge of modifications of normal diet for therapeutic purposes.	PO4, PO9
CO 4	Capable of describing importance of nutrition in critical conditions like burn, surgery, drug interaction etc	PO4, , PO9, PO10
CO 5	Get an idea nutrition and diet clinics	PO1 , PO2, PO3, PO4, PO9, PO10

Course Title: Basic Dietetics(Practical)

Course Code: C7P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Acquire the skills and techniques involved in the planning and preparation of therapeutic diets for various ailments.	PO1 , , PO4, PO10



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CO 2	Develop the capacity and attitude for taking dietetics as a profession.	PO1 , PO2, PO3, PO8, PO9, PO10
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Course Title: SEC

Course Code: SEC 1T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Understand the basic concept of immunity and its type	PO1 , PO9, PO10
CO 2	Acquire knowledge on mechanism of humoral immunity	PO1 , PO2, PO3, PO4, PO5, PO6, PO7, PO8
CO 3	Learn about cell mediated immune system	PO1 , PO2, PO3, PO4, PO10
CO 4	Gain knowledge on toxicities of different xenobiotics	PO1 , PO2, PO3, PO4, PO9
CO 5	Understand Eco - toxicology	PO1 , PO2, PO3, PO10

### SEMESTER – IV

Course Title: Diet and Diseases (Theory)

Course Code: C8 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Know the metabolic condition of the life style related diseases.	PO1 , PO2, PO3, PO4, PO5, PO6, PO7
CO 2	Explain the risk factors for degenerative diseases and toward the management of the several disease conditions.	PO1 , PO2, PO3, PO10
CO 3	Students able to understand the causes, symptoms, risk factors and dietary management of different disease conditions like DM, gall bladder & pancreas, kidney and liver diseases.	PO1 , PO2, PO3, PO4, PO5

Course Title: Diet and Diseases(Practical)

Course Code: C8 P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Acquire skills to plan a diet for metabolic diseases based on the dietary modification	PO1 , PO6, PO7, PO8,
CO 2	Evaluate the related food source for the special conditions.	PO1 , PO4, PO5, PO6, PO7, PO8

Course Title: Food Microbiology (Theory)

Course Code: C9 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
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CO 1	Able to understand the important pathogens and spoilage microorganisms in foods, the most likely sources of these organisms, and the conditions under which they grow, the role of beneficial microorganisms in foods and their use in fermentation processes.	PO3, PO4, PO5, PO6, PO7
CO 2	Understand the nature of micro organisms involved in food spoilage, food infections and intoxications.	PO3, PO4, PO5, PO6, PO7
CO 3	Comprehend various techniques used for isolation, purifications, identifications and controlling the growth of micro organisms.	PO1 , PO2, PO3, PO4, PO5, PO6, PO7
CO 5	Assess the microbial safety of personal hygiene, water, milk and food products in various food operations.	PO1 , PO2, PO4, PO5, PO6

Course Title: Food Microbiology(Practical)

Course Code: C9 P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Understand the operational functions of microscope and sterilizing equipments .	PO1 , PO2, PO3, PO4, PO5, PO6, PO7, PO8
CO 2	Develop skills in performing various microbiological tests used in food industry.	PO1 , PO2, PO3, PO4, PO8,
CO 3	Update the knowledge in identifying the important microorganism present in food.	PO1 , PO2, PO3, PO4,

Course Title: Food processing and preservation (Theory)

Course Code: C10 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Understand the basic principles of food preservation methods, including high temperature, drying and dehydration, high pressure, fermentation etc	PO1 , PO4, PO5, PO6, PO7, PO8,
CO 2	Students will understand the concept of processing and preservation of fruits and vegetables.	PO1 , PO3, PO4, PO10
CO 3	Students are able to understand the basic knowledge relating to food safety and principles of preservation.	PO1 , PO6, PO7, PO8, PO9, PO10

Course Title: Food processing and preservation (Practical)

Course Code: C10 P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Student will enable to understand different food preservation techniques, process.	PO1 , PO2, PO6, PO7, PO8, PO9, PO10
CO 2	Student will enable to extend shelf life of different food product by using the various methods of food preservation.	PO1 , PO4, PO5, PO6, PO7, PO8, PO9, PO10

**SEMESTER V**



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Course Title: Public Health and Hygiene (Theory)

Course Code: C11 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Make improvements in developing the current public health programmes.	PO1 , PO2, PO3, PO6, PO7, PO8, PO9, PO10
CO 2	Acquire skills in Food Sanitation and Safety.	PO1 , PO2, PO9, PO10
CO 3	Get a clear view on food borne disorders	PO1 , PO2, PO3, PO4, PO9, PO10
CO 4	update the knowledge in community water and waste management	PO1 , PO2, PO3, PO4, PO5,
CO 5	Understand the concept of mental health	PO1 , PO2, PO3, PO4, PO10

Course Title: Public Health and Hygiene (Practical)

Course Code: C11 P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Learn how to assignment programme on public health, nutrition and disease	PO1 , PO2, PO3, PO4, PO5, PO6, PO7

Course Title: Research Methodology (Theory)

Course Code: C12 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Demonstrate knowledge of the scientific methods, purpose and approaches to research.	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 2	Compare and contrast quantitative and qualitative research.	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 3	Explain research design and the research cycle	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 4	Prepare a key elements of a research proposal.	PO4, PO5, PO6, PO7, PO8, PO9, PO10

Course Title: Research Methodology (Practical)

Course Code: C12 P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Gain practical knowledge toFormulation of project design.	PO1 , PO2, PO3, PO7, PO8, PO9, PO10





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CO 2	Acquire skills in survey, case study, Tools and techniques Tabulation and interpretation	PO1 , PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10
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Course Title: Food Sanitation and Hygiene (Theory)

Course Code: DSE 1

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Study of food contaminants and various methods of maintenance of food hygiene.	PO1 , PO2, PO3, PO10
CO 2	Understand the importance of food Sanitation and Hygiene in maintaining good nutrition	PO1 , PO2, PO3, PO7, PO8, PO9, PO10
CO 3	Acquire skills in different cleaning methods	PO1 , PO2, PO3, PO7, PO8, PO9, PO10
CO 4	Learn about control of infestation	PO1 , PO2, PO3, PO7, PO8, PO9, PO10

Course Title: Food Sanitation and Hygiene (Practical)

Course Code: DSE 1P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Study personal and environmental hygiene	PO1 , PO2, PO3, PO7, PO8, PO9, PO10
CO 2	Gain practical knowledge to Preserve fruits and vegetables for later-use	PO4, PO5, PO6, PO7, PO8, PO9, PO10

Course Title: Quality Control and Food Standards (Theory)

Course Code: DSE 2

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Understand the Food regulation Acts in India.	PO1 , PO2, PO3, PO4, PO5, PO6, PO10
CO 2	Get a clear view on HACCP	PO1 , PO2, PO3, PO7, PO8, PO9, PO10
CO 3	Gain knowledge on Codex Alimentarius Commission (CODEX)	PO1 , PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 4	Acquire knowledge on GMP, GHP,GAP in Food service	PO4, PO5, PO6, PO7, PO8, PO9, PO10



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CO 5	Thorough knowledge on various tests and quality assessment, using standards for quality assessment and food safety.	PO4, PO5, PO6, PO7, PO8, PO9, PO10
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Course Title: FoodQuality and Sensory Evaluation (Practical)

Course Code: DSE 2P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Understand how to perform Sensory Evaluation of different food stuffs	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 2	Gain practical knowledge on quality evaluation of various food stuffs	PO1 , PO2, PO3, PO7, PO8, PO9, PO10

### SEMESTER VI

Course Title: Dietetics and Counselling (Theory)

Course Code: C13 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Understand the principles and methods of counselling.	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 2	Understand how to Apply counselling methods to patients with different diseases	PO1 , PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 3	Gain knowledge on computer operations and applications	PO1 , PO2, PO3, PO7, PO8, PO9, PO10
CO 4	Facilitate students to design and use computer based projects and programs.	PO1 , PO2, PO3, PO7, PO8, PO9, PO10

Course Title: Dietetics and Counselling (Practical)

Course Code: C 13P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Gain practical knowledge on planning nutrition counselling session and organising health camps	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 2	Impart the nutrition education using visual aids	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 3	Acquire skills in collecting and submitting data of different disease	PO4, PO5, PO6, PO7, PO8, PO9, PO10



Course Title: **Entrepreneurship development, Enterprise management and Entrepreneurship for small catering units** (Theory)

Course Code: C14 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Study of various aspects of entrepreneurship for setting up one's own enterprise in future.	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 2	Brief idea of various food service outlets and their staff organisation, menu planning, service style, beverages.	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 3	understand the basic principles of management in food service units	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 4	develop managerial skills in food service industries.	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 5	update the skills and techniques in starting up a food service unit successfully.	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 6	Gain knowledge on personnel management	PO4, PO5, PO6, PO7, PO8, PO9, PO10

Course Title: **Entrepreneurship development, Enterprise management and Entrepreneurship for small catering units** (Practical)

Course Code: C14 P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Learn about SWOT Analysis	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 2	Acquire skills in market survey	PO4, PO5, PO6, PO7, PO8, PO9, PO10

Course Title: **Personnel management and Food service management** (Theory)

Course Code: DSE3 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Gain knowledge on personnel management	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 2	understand the basic principles of management in food service units	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 3	Detailed study of equipments required in food service industry, planning	PO1, PO2, PO3,



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	and designing various food service outlets, kitchen management and sanitation.	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 4	Brief idea of various food service outlets and their staff organisation, menu planning, service style, beverages.	PO4, PO5, PO6, PO7, PO8, PO9, PO10

Course Title: **Personnel management and Food service management** (Practical)

Course Code: DSE3 P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Learn about Work simplification	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 2	Brief idea of storekeeping, personnel recruitment	PO4, PO5, PO6, PO7, PO8, PO9, PO10

Course Title: **Food Packaging** (Theory)

Course Code: DSE3 T

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Apply and examine the knowledge of properties for selection of packaging materials for foods food products	PO4, PO5, PO6, PO7, PO8, PO9, PO10
CO 2	Evaluate new and emerging technology and related underpinning science in food science in packaging	PO7, PO8, PO9, PO10
CO 3	Demonstrate advanced knowledge and skills in selecting packaging materials and technologies based on the characteristics of food product and characteristics of packaging materials and storage and distribution of requirements	PO7, PO8, PO9, PO10

Course Title: **Food Packaging** (Practical)

Course Code: DSE4 P

Course Outcome	On completing the course, the student will be able to:	PSOs addressed
CO 1	Testing of physical/mechanical properties of food packaging material.	PO7, PO8, PO9, PO10
CO 2	UnderstandPackaged food cut-out analysis.	PO7, PO8, PO9, PO10