**BACHELOR OF SCIENCE (NUTRITION & DIETETICS)**

**SEMESTER-1**

 **CORE COURSE -1: HUMAN PHYSIOLOGY (21UND01)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Gain basic knowledge of human anatomy and physiology.

**CO2:** Define the main structures composing the human body.

**CO3:** Explains the structure and functions of cells, tissues, organs, and systems of the human body.

**CO4:** Relates structure and functions of tissue.

**CO5:** Provides excellent preparation for careers in the health professions and/or biomedical research.

**CORE COURSE -2 FOOD SCIENCE (21UND02)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Summarise, critically discuss, and understand both fundamental and applied aspects of food science.

**CO2:** Identifying nutrient-specific forces and applying the principles from the various factors of foods and related disciplines to solve practical as well as real-world problems

**CO3:** Understand the food groups and their functions, acquire knowledge on different methods of cooking, and apply the process to different foods.

**CO4:** Use a combination of foods in the development of food products. 5. Identify and control adulterants in various foods and evaluate food quality.

**CO5:** Use current information technologies to locate and apply evidence-based guidelines and protocols and get imported with critical thinking to take leadership roles in the fields of health, diet, and special nutritional needs.

**CORE PRACTICAL-1-HUMAN PHYSIOLOGY (21UNDP01)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Gain basic knowledge of the different vital organs, glands, and tissues under a microscope.

**CO2:** To estimate the blood parameters like haemoglobin, blood group, bleeding time, clotting time, and platelet count.

**CORE PRACTICAL-2-FOOD SCIENCE (21UNDP02)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Demonstrate skills in determining the edible portion and the effect of cooking on volume and weight.

**CO2:** Choose appropriate cooking methods to conserve nutrients.

**CO3:** Acquire skills in different methods of cooking. Understand experimental cooking.

**CO4:** Develop recipes by applying knowledge of cooking methods and the properties of food.

**CORE COURSE -3 NUTRITIONAL BIOCHEMISTRY (21UND03)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** To acquire knowledge related to the role of the TCA cycle in central carbon metabolism.

**CO2:** To understand the importance of lipids as storage molecules and as structural components of biomiddles.

**CO3:** Capable of describing biochemical pathways relevant to nutrient metabolism.

**CO4:** To understand the concepts of the preparation of buffers

**CO5:** To acquire fundamental knowledge on enzymes and their importance in biological reactions

**CORE COURSE -4- PRINCIPLES OF HUMAN NUTRITION (21UND04)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Summarise, critically discuss, and understand both fundamental and applied aspects of nutrition.

**CO2:** Able to explain the functions of specific nutrients in maintaining health

**CO3:** Identifying nutrient-specific forces and applying the principles from the various factors of foods

**CO4:** Gain basic knowledge of the different nutrients and their role in maintaining the health of the community.

**CO5:** Develop skills in qualitative analysis and quantitative estimation of nutrients.

**CORE PRACTICAL-3 NUTRITIONAL BIOCHEMISTRY (21UNDP03)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** To learn the qualitative and quantitative analysis of biological fluids such as urine and blood and their estimation using standard methods.

**CORE PRACTICAL-5-FOOD ANALYSIS AND QUALITY CONTROL**

**(21UNDP04)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** To understand different sampling techniques employed in the chemical analysis of foods

**CO2:** To understand the quality attributes, their measurement principles, and the instrumentation of various instruments used in food quality analysis.

**CO3:** To learn about the importance of various methods to identify any adulteration aspect of food.

**CORE COURSE -5- NUTRITION IN LIFE CYCLE (21UND05)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** To apply knowledge of the science of nutrition to human health across the lifespan.

**CO2:** Relate foods and nutrients to the biological requirements of humans at different stages of the life cycle.

**CO3:** Explain, compare, and contrast the nutritional requirements of humans during different stages of the life cycle.

**CO4:** Apply collaboration and teamwork skills through shared learning on nutritional disease topics.

**CO5:** To formulate a dietary intervention plan to address nutritional deficiencies or excesses according to the health needs of individuals relative to age, developmental status, and disease status.

**CORE COURSE -6-ADVANCED DIETETICS (21UND06)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Understanding the diet counselling skills and acquainting them with basic principles

**CO2:** Determine and translate nutrient needs into menus for individuals and groups across the lifespan, in diverse cultures and religions.

**CO3:** Students will be able to interpret and apply nutrition concepts to evaluate and improve the nutritional health of individuals with medical conditions.

**CO4:** Produce oral and written communications for a group education session.

**CO5:** Interview individuals for diet histories and counsel individuals.

**CORE PRACTICAL-4-NUTRITION IN LIFE CYCLE AND DIETETICS**

**(21UNDP04)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Nutrition in the life cycle focuses on food management through proper planning, preparation, monitoring, implementation, and supervision of different age groups, and to develop basic counselling skills, a dietitian

**CO2:** Understanding the conditions where nutrition plays a significant role in disease management

**CO3:** Develop the knowledge to provide nutrition and dietetic care for individuals, groups, and populations who have or are already at risk of developing long-term health conditions.

                              **CORE COURSE -8- FOOD MICROBIOLOGY (21UND08)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Explain the interactions between microorganisms and the food environment and the factors influencing their growth and survival.

**CO2:** Explain the significance and activities of microorganisms in food.

**CO3:** Describe the characteristics of foodborne, waterborne, and spoilage microorganisms and methods for their isolation, detection, and identification.

**CO4:** Understand the role of microorganisms in the environment.

**CO5:** Apply preservation techniques to avoid food spoilage.

                       **CORE COURSE – 9- QUANTITY FOOD SERVICE AND PHYSICAL**

**FACILITIES (21UND09)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Manage the human resources within a food services organisation or department.

**CO2:** Communicate appropriately with clients, staff, and management.

**CO3:** Apply food services technology and operate industry equipment.

**CO4:** Develop nutritional menus for food service production.

**CO5:** Design and run a quantity food service establishment.

             **SBEC – I –FOOD PRESERVATION AND PROCESSING (21UNDS01)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Describe the principles of food preservation.

**CO2:** Suggest the application of the preservation process depending on the type of food.

**CO3:** To understand the principles of processing plant foods and to study the need for processing foods.

**CO4:** Choose the appropriate application of certain conservation processes with regard to the preservation of quality and the satisfactory durability of food products.

**CO5:** Optimise process parameters for selected conservation processes, taking into account the physico-chemical properties of food products.

**SBEC – II –FOOD STANDARD AND QUALITY CONTROL (21UNDS02)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** To provide an opportunity to learn food quality standards.

**CO2:** To develop skills for the standardisation of food products with respect to quality maintained according to universal food standards worldwide.

**CO3:** To understand the principles of sensory evaluation

**CO4:** To develop skills to carry out sensory evaluation of a newly developed product

**CO5:** To understand the terms food adulteration and adulterant.

**SBEC – III–BAKERY SCIENCE (21UNDS03)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Resize recipes to meet production needs and equipment capacities.

**CO2:** Scale, mix, mold, proof, and bake yeast-raised goods.

**CO3:** Prepare cookies using various common dividing and panning techniques.

**CO4:** Prepare product finishes such as washes, glazes, icings, and fillings.

**CO5:** To develop skills for setting up a bakery unit and to enhance entrepreneurial skills in bakery and confectionery.

**SBEC PRACTICAL-4- FOOD PRESERVATION & BAKERY (21UNDSP01)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Apply major food preservation techniques and explain the underlying principles.

**CO2:** Design common bakery and confectionery recipes.

                                   **SBEC-5- DIET COUNSELLING (21UNDS05)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Understanding the diet counselling skills and acquainting them with basic principles

**CO2:** Determine and translate nutrient needs into menus for individuals and groups across the lifespan, in diverse cultures and religions.

**CO3:** Students will be able to interpret and apply nutrition concepts to evaluate and improve the nutritional health of individuals with medical conditions.

**CO4:** Produce oral and written communications for a group education session.

**CO5:** Interview individuals for diet histories and counsel individuals.

**SBEC -6- ENTREPRENEURSHIP DEVELOPMENT (21UNDS06)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:**  Understand the concept of entrepreneurship.

**CO2:**  Identify ways to approach supportive institutions and banks about starting an enterprise.

**CO3:** Analyse the steps in product selection and form of ownership.

**CO4:** Focus on the formation of project proposals and practice effective accounting processes.

**CO5:** Understand the requirements to become an entrepreneur.

**ELECTIVE COURSE-1-PUBLIC HEALTH NUTRITION (21UNDE01)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Finally, the concepts and knowledge required for the delivery of community nutrition services will be applied to programme planning, intervention, and evaluation.

**CO2:** Gaining knowledge on nutritional programmes and policies overcoming malnutrition

**CO3:** Understanding the national, international, and voluntary nutritional organisations to combat malnutrition

**CO4:** Able to organise community nutrition education programmes with the application of computers.

**CO5:** Apply immunological intervention programmes to overcome the epidemic of communicable diseases.

**ELECTIVE COURSE-2-BASIC IN RESEARCH METHODOLOGY**

**(21UNDE02)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Basic knowledge on the role and importance of research in science

**CO2:** Critically analyse research methodologies identified in existing literature.

**CO3:** Understanding the complex issues inherent in selecting a research problem, selecting an appropriate research design, and implementing a research project

**CO4:** Develop a research proposal or industry project plan.

**CO5:** Search for, select, and critically analyse research articles and papers.

**ELECTIVE COURSE-3-NUTRITION FOR SPORTS AND FITNESS**

**(21UNDE03)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Explain how the principles of physical fitness and nutrition (such as body composition, energy intake, energy expenditure, and the acute and chronic physical changes related to exercise and nutrition) complement each other in helping to develop physiological well-being and overall health.

 **CO2:** Explain how the principles of fitness and nutrition (such as setting realistic short-term behaviour change goals and the relationship of exercise and diet to stress reduction) complement each other in helping to develop psychological well-being and overall health.

**CO3:** Identify some of the social and cultural influences on food habits and exercise/activity patterns.

**CO4:** Evaluate current nutritional information with regard to its contribution to health and physical fitness.

**CO5:** Apply the knowledge acquired to the planning of diets for athletes.

                    **ALLIED COURSE-1:   ALLIED CHEMISTRY-1 (21UCHA01)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:**  Students are able to understand volumetric principles and prepare standard solutions.

**CO2:** Students are able to recognise various types of bonds.

**CO3:**  Students gain knowledge on drugs and their modes of action.

**CO4:**  Able to identify acids and bases and to acquire knowledge about pH and buffer

**CO5:** Able to categorise the kinds of catalysis and gas laws

                                        **ALLIED CHEMISTRY-2 (21UCHA02)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Students are able to understand complexes and their industrial importance.

**CO2:** Students are able to recognise radioactivity and applications of radioisotopes.

**CO3:**  Students are able to identify different types of organic reactions and polymers.

**CO4:** Students are able to classify dyes and acquire knowledge on fats and oils.

**CO5:** Students are able to categorise conductance and phase.

**ALLIED PRACTICAL–I: CHEMISTRY PRACTICAL-I (21UCHAP01)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Prepare standard solutions.

**CO2:** Know knowledge about normality and the equivalent weight of compounds.

**CO3:** Analyse organic compounds.

**CO4:** Analyse organic compounds

**CO5:** To know the volumetric value

                     **ALLIED COURSE-II:  GENERAL HOME SCIENCE-1 (21UNDA01)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Develop an understanding of the concepts and basics of textiles.

**CO2:** Understands and defines the key textile terms.

**CO3: Understand the** basic principles of clothing construction.

**CO4:** Concept, definition, universality, and scope of family resource management

**CO5:** Practicing knowledge gained on site selection and building principles in real-life situations

              **ALLIED COURSE-II :   GENERAL HOME SCIENCE- II (21UNDA02)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Provide situations to understand the significance of family income and expenditure and saving for the future.

**CO2:** Know the importance of the early childhood years and the significance of intervention programmes for early childhood development.

**CO3:** Learn about women’s human rights and laws related to women in India.

**CO4:** Gain knowledge of consumer protection laws and acts and reflect on personal rights and responsibilities.

**CO5:** Learn about the concept of extension, extension approaches, and models. Course

**ALLIED PRACTICAL –II: GENERAL HOME SCIENCE PRACTICAL-I**

**(21UNDAP01)**

**COURSE OUTCOMES (COs):**

After the successful completion of this course, the students will be able to

**CO1:** Function as a productive and responsible individual in relation to self, family,
community and society.
**CO2:** able to apply the basics of human development with specific reference to self,
family and community.
**CO3:** able to utilise the skills of judicious management of various resources
**CO4:** will be sensitised to fabric and apparel, their selection, and their care.
**CO5:** inculcate healthy food habits and lifestyles to enable prevention and
management of diseases.