

**MOUNT CARMEL COLLEGE, AUTONOMOUS**  
**DEPARTMENT OF FOOD SCIENCE AND NUTRITION**  
**Program Learning Outcomes & Course Learning Outcomes**  
**B.Sc. NDHD Dual Major**

**Name of the Program: NUTRITION & DIETETICS & HUMAN DEVELOPMENT**

**Program Specific Outcome**

1. Imparting the fundamental knowledge in all the major domains of Nutrition Science and related areas of studies.
2. Developing competency in application of knowledge in different settings i.e. family, community, workplace etc
3. Imparting and developing skills for higher degree with specializations, and for professional life in different related areas, foster research & development, teaching, government and public service and entrepreneurship.
4. Demonstrate an understanding of the complexity of individuals and families biologically, intellectually, psychologically, socially, emotionally, morally, and spiritually.
5. Exhibit the ability to create resources and initiatives using appropriate learning strategies and technologies to support the development and well-being of children, families, and society.
6. Exemplify the potential to evaluate and apply research, and theory to practice as well as analyze processes, policies, and contextual factors that affect the delivery of human services to individuals and families

**Program Learning Outcomes**

- Providing quality tertiary education through hands-on learning, incorporating both universal and specific values in the areas of Nutrition and Human Development.
- Promoting a mindset of continuous change and adaptation, developing the ability to navigate complex societal and national issues, and producing leaders with a well-rounded perspective that spans multiple stakeholders.
- Develop the ability to balance self, societal, and national priorities and become proficient in various areas such as research, teaching, government and public service, and entrepreneurship.
- The goal is also to create professionals with specialized skills, foster a passion for lifelong learning and instill both generic and subject-specific skills to prepare students for the employment market and contribute to nation building strategies.

## **B.Sc. – I Semester (DSC)**

Title of the Course: **FUNDAMENTALS OF NUTRITION COURSE**

### **COURSE LEARNING OUTCOME**

CLO 1: Develop basic understanding of food and nutrition and its impact on human health, food groups and their composition, factors that influence food choice and nutrition concepts. Familiarize with Dietary Guidelines for Indians and teaches students to identify mandatory components of food labels and list and describe major factors in nutrition assessment of an individual.

CLO 2: To predict energy balance in the body, determine BMI and total energy expenditure using standard equations, define Dietary Reference Intake values: DRI, EAR, RDA, AI, and DV. and TUL. Determine the corresponding disease risks associated with excess calorie intake and body fat distribution.

CLO 3: To understand the classification, digestion, absorbed, recommendations and functions of the macronutrients – carbohydrates, proteins and fats. To understand the deficiency and excess of these. To understand the importance of water and its role in maintaining health.

CLO 4: To develop sound understanding of the fat-soluble and water soluble vitamins, their absorption, storage, and transport as well as to understand the deficiency and toxicity of these.

CLO 5: To study the effect mineral bioavailability, the absorption, storage, and transport, the functions, food sources, symptoms and diseases associated with mineral deficiency toxicity. To understand the role of electrolyte balance in the body.

### **Course Title: DSC1 - Fundamentals of Child Development**

#### **Course Outcomes (CO)**

1. Gain an overview about the field of child development and understand the process and principles underlying growth and development
2. Understand the interplay between biology and behavior and Assimilate the domains of development and their interrelationships
3. Understand the prenatal and postnatal development including characteristics, care, influencing factors on the development of newborn and Gain competence over the developmental tasks from birth to late childhood.
4. Describe young children's diverse characteristics and needs, from birth through age

six.

5. Demonstrate knowledge and understanding of important processes, periods and issues in development during early and late childhood years.

## **OPEN ELECTIVE COURSES**

### **B.Sc. I Semester (OE)**

Title of the Course: **Nutrition Literacy and Health** (OPEN ELECTIVE)

#### **Course Learning Outcomes :**

CLO 1: To familiarize students with fundamentals of food, nutrients and relationship with health

CLO 2: To associate the role of macro and micronutrients in health

CLO 3: To understand the concept of meal planning and general food choices

CLO4: To provide knowledge on food safety and consumer awareness on nutrition

Course Title: **Open Elective 1- Elements of Human Behaviour (OE)**

#### **Course Outcomes (CO)**

1. Analysing and understanding elements of human behavior such as learning, perception, sensation, attitude and memory.
2. Understand structure, composition, functioning and changes in brain development and concept of learning process and learning theories
3. Understand the importance, processing, and nature of memory alongside types of memory and strategies to enhance memory.
4. Ability to suggest help and resources to handle the crisis by the change of attitude.
5. Overview about the general behaviour patterns among individual

## **B.Sc. – II Semester (DSC)**

Title of the Course: **PRINCIPLES OF FOOD SCIENCE & PRESERVATION**

### **Course Learning Outcomes:**

CLO 1: Learn to understand the important terminology and applications in Food Science, understand food groups, properties of foods, methods of food preparation and sensory evaluation as well as learn to practically apply the basic knowledge gained.

CLO 2: Gain knowledge about the structure, composition and uses of cereals, pulses, fruits and vegetables, and understand processing methods to ensure food quality standards.

CLO 3: Distinguish the composition, characteristics, types of products and changes during processing of milk, meat, fish and poultry

CLO 4: Recognize the important fats, oils and sugars, their composition and properties during storage and processing.

CLO 5: Understand the concept of food preservation, its basic principles, methods, food safety, and to familiarize with food additives.

### **Course Title: DSC 2- Early Childhood Care and Education**

#### **Course Outcomes (CO)**

1. Understanding national level early childhood model
2. Design, implement and evaluate play-based early learning curriculum and programs that support children's holistic development
3. Demonstrate pedagogical practices that are connected to theoretical approaches of learning, thinking and teaching in the field of early childhood care and education.
4. Assess, develop and maintain safe, healthy and quality early learning environments which meet the requirements of current legislation, and evidence-based practices in early learning.
5. Awareness of different national and international bodies that are working in the field of early childhood years.

## **B.Sc. II SEMESTER (OE)**

### **OPEN ELECTIVE: NUTRITION IN EXERCISE AND PHYSICAL FITNESS**

#### **Course Learning Outcomes:**

CLO1: To understand the fundamentals of nutrition

CLO2: To get acquainted with the role of skeletal system in exercise

CLO3: To gain an understanding of the concept of physical fitness, types and their relationship with health

CLO4: To learn about the importance of nutrients in enhancing physical fitness

CLO5: To gain knowledge regarding the role of physical fitness in various facets of health.

#### **Course Title: Open elective 2: Family and Relationship Management**

#### **Course Outcomes (CO)**

1. Understanding marriage and recent trends in marriage.
2. Understand structure, composition, functioning, and changes in the concept of family
3. Identify areas of potential conflicts in the families
4. Ability to suggest help and be a resource to handle the crisis through interventions.

## **B.Sc. III Semester (DSC)**

Title of the Course: **Nutrition Through Life Span**

### **Course Learning Outcomes:**

CLO 1: Ability to gain insight into alterations in nutrition and health status during adulthood and the impact of improved nutrition to reverse it. To understand dietary recommendations and the modifiable nutrition risk factors faced by adults to reduce risk of specific diseases and ensure adequate nutrient intake.

CLO 2: Gain insight on the impact of nutrition on conception, pregnancy, lactation, and maternal health. To understand maternal physiological changes that occur during pregnancy and the corresponding nutritional needs. Identify benefits of breastfeeding for both infant and mother

CLO 3: Understand the energy and nutrient needs during infancy, familiarize with the appropriate steps of introducing solid foods into an infant's diet. Identify feeding problems during infancy and provide recommendations to overcome them.

CLO 4: Assessment of normal growth and body development in childhood and adolescence. To understand nutritional needs and concerns during these stages.

CLO 5: To gather current research on the nutrient needs and factors affecting nutritional status of the elderly. Understand the age-related changes and nutritional concerns with the aging process. Apply meal management strategies for older adults.

Course Title: **DSC 3- Development in Adolescence and Adulthood**

### **Course Outcomes (CO)**

1. Exhibit the understanding of biological and cognitive development during adolescence
2. Demonstrate knowledge and understanding of the psychosocial development during adolescence
3. Understand the important processes, and issues in development during young adulthood
4. Understand key issues of midlife crises such as empty nest, menopause, andropause and preparation to retirement.
5. Determine the impact of ageing, key issues and challenges related to old age.

## **B.Sc. III Semester (OE)**

### **OPEN ELECTIVE : NUTRITION ASSESSMENT FOR THE COMMUNITY**

#### **Course Learning Outcome:**

CLO1: To describe the various methods of nutrition assessment

CLO2: To apply the principles and methods of anthropometry to monitor nutritional growth

CLO3: To gain an understanding of the laboratory based assessment correlating to health

CLO4: To describe and gain knowledge on quantitative and qualitative aspects of diet assessment

#### **Course Title: Open elective 3: Fundamentals of Guidance and Counselling**

#### **Course Outcomes (CO)**

1. Know the concept of guidance.
2. Understand the role of family members in different stages.
3. Importance of interaction between the family members and the influence of healthy family relationship.
4. Develop basic counselling skills

## **B.Sc. IV Semester (DSC)**

### **Title of the Course: HUMAN PHYSIOLOGY**

#### **Course Outcomes (COs):**

CLO 1: Gain knowledge about the cellular structure, composition, role of blood and their components and functions, lymphatic and immune systems and inflammation.

CLO 2: Familiarize with functioning and regulation of the cardiovascular system and respiratory system.

CLO 3: Gather the structure and functioning of digestive system, liver and renal system

CLO 4: Comprehend the role of musculoskeletal and nervous systems in terms of their structure, function and regulatory roles.

CLO 5: Understand the function of endocrine and reproductive systems and recognize endocrine disorders.

Course Title: **DSC4 - Guidance in Child Development**

**Course Outcomes (CO)**

1. Demonstrate an understanding of the concept and scope of guidance.
2. Understand the role of family members in Guiding children at different stages.
3. Show an understanding of the importance of monitoring children and adolescents
4. Understand the role of school in guiding children and styles of disciplining and its effect.
5. Recognize common behaviour problems in children and learn to deal with problematic behaviours of school children.
6. Identify and guide children who are at risk for developing behaviour problems

**B.Sc. V Semester (DSC)**

Title of the Course: **Food Microbiology**

**Course Outcomes**

**CLO 1** : Understand about the origin of microbiology and characteristics of microorganisms.

**CLO 2** : Gain knowledge on factors affecting growth and death of microorganisms

**CLO 3**: Learn about microbial food spoilage and food-borne illnesses

**CLO 4** : Acquire knowledge on the role of food microbiology in biotechnology

Course Title: **DSC 5: Children with Special Needs and Inclusive Education**

**Course Outcomes (CO)**

1. Understand the concept, causes, needs of special children and the programs and policies for special children
2. Gain knowledge on physically, mentally, educationally, developmentally sensory challenged children
3. Gain competence in making IEP and providing intervention programs to children with special needs
4. Apply the knowledge learnt in identifying and assessing the children with special needs.
5. Analyze the importance of inclusive education for special children.



## **B.Sc. V Semester (DSC)**

Title of the Course: **Clinical Nutrition and Dietetics-I**

### **Course Outcomes (COs):**

**CLO 1:** Know the role of dietetics in preventive, promotive and curative health care

**CLO 2:** Understand the clinical condition with relevant data (laboratory, anthropometry, pharmacology)

**CLO 3:** Develop skills to make appropriate dietary modifications in clinical conditions

### **Course Title - DSC 6 : PROGRAMS AND POLICIES FOR VULNERABLE GROUPS**

#### **Course outcomes:**

1. Understand different forms of vulnerability in India.
2. Gain knowledge about the issues and challenges faced by vulnerable groups in India and apply the same to sensitize the public.
3. Analyze the programs and policies related to vulnerable groups
4. Identify different means to eradicate vulnerability
5. Able to appreciate the role of various organization in uplifting the vulnerable groups

## **B.Sc. VI Semester (DSC)**

Title of the Course: **Clinical Nutrition and Dietetics-II**

### **Course Outcomes (COs):**

**CLO 1:** Integrate dietetics and counseling in preventive, promotive and curative health care

**CLO 2:** Understand the clinical condition with relevant data (laboratory, anthropometry, pharmacology)

**CLO 3:** Utilize and demonstrate skills to make appropriate dietary modifications in clinical conditions.

### **Course Title - DSC 7 : FAMILY DYNAMICS**

#### **Course outcomes:**

1. Understand the components of family and marriage
2. Gain knowledge of the family relationship, family processes and family life cycles.
3. Understand how to manage family system, functions of family in India.
4. Recognize the different approaches to family study.

5. Understand the impact separation on education and employment of women outside the family
6. Knowledge of the laws pertaining to marriage and divorce.

**B.Sc. VI Semester (DSC)**

Title of the Course: **Intermediary metabolism**

**Course Outcomes (COs):**

**CLO 1:** Obtain an insight into the chemistry of major nutrients and physiologically important compounds.

**CLO 2 :** Understand the major pathways for metabolism of nutrients and key mechanisms regulating these pathways.

**CLO 3:** Understand the normal blood metabolites and relate to abnormal metabolic conditions.

Course Title - **DSC 8 : DEVELOPMENTAL ASSESSMENT ACROSS LIFESPAN**

**Course outcomes:**

1. Demonstrate the ethical principles associated with assessment
2. Develop a knowledge of different assessment methods.
3. Understand the significance of different techniques of research in Human Development.
4. Gain the knowledge of different areas of assessments.
5. Learn the importance of report writing and documentation.