

M.S. Ramaiah University of Applied Sciences

New BEL Road, MSR Nagar, Bangalore – 560054



**RAMAIAH
UNIVERSITY**
OF APPLIED SCIENCES

PO, PSO, PEO & CO

Programme: M.Sc. Food Nutrition and Dietetics

Programme Code: 106

Programme Outcome (PO)

Programme Specific Outcome (PSO)

Program Educational Objectives (PEO)

Course Outcomes (CO)

Registrar

M.S. Ramaiah University of Applied Sciences
Bangalore - 560 054

Dean

Faculty of Life and Allied Health Sciences
M.S. Ramaiah University of Applied Sciences
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Faculty of Life and Allied Health Sciences (FLAHS)

Programme Name: M.Sc. Food Nutrition and Dietetics

Programme Outcomes (POs)

- PO 1. **Technical Knowledge:** Demonstrate in-depth knowledge of the scientific fundamentals and the modern technical knowledge needed to support food nutrition research activities
- PO 2. **Design/ Development solution:** Identify, analyse and understand the problems related to life sciences and find valid conclusions with basic knowledge acquired in the field
- PO 3. **Multidisciplinary approach:** Correlate how different sub-systems co-operate with each other into current research and development in the respective fields
- PO 4. **Entrepreneurship skills:** Analyze manufacturing constituents and complete systems for relevant products and to enable enterprising skills for competing globally
- PO 5. **Societal Responsibility:** Innovate and develop sustainable solutions and understand their effect on society and environment
- PO 6. **Leadership and Ethics:** Apply professional Ethics, Leadership and consensus building skills relevant to the aspects of business enterprise in the respective fields
- PO 7. **Lifelong learning:** Adopt changes and advancements in science and engage in independent learning
- PO 8. **Communication:** Communicate the information effectively in scientific writing and oral presentation

Programme Specific Outcomes (PSO)

- PSO 1. Impart knowledge and understanding of the basic and emerging concepts in the field of clinical and community nutrition, meal planning, food processing, food preservation, food chemistry, food microbiology, and product development
- PSO 2. Enable students to solve complex problems and acquire analytical skills using the latest techniques and tools to find out the solution for food and nutrition-related issues
- PSO 3. Apply theoretical concepts and scientific research to nutrition practices, clinical intervention, nutrition assessment, diet planning, documentation, and publication
- PSO 4. Acquire focused perspective on economics, interpersonal and communication skills and ethics, relevant to professional practice and encourage entrepreneurship


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Programme Educational Objectives (PEO):

The objectives of the programme are to enable the students to:

- PEO 1. Provide a common platform for students from varied disciplines, to nurture their zeal to enhance knowledge in food nutrition and dietetics through structured course curriculum and research opportunities
- PEO 2. Enable the students to be proficient in new product development through application of cutting edge technologies in food processing, functional foods, and nutraceuticals
- PEO 3. Facilitate students with contemporary knowledge of holistic nutrition, food quality and safety for development of healthy and safe foods
- PEO 4. Stimulate interdisciplinary research or pursue doctoral programs and enable them for industry and or academia, thus enhancing skilled professionals in the field of nutrition and dietetics

Course Outcomes (COs)

Course Title & Code: Principles of Food Science (FNC501A)

After undergoing this course students will be able to:

- CO-1. Describe the components and properties of food.
- CO-2. Discuss the nutritive value of different food groups.
- CO-3. Discover the changes in physiochemical and functional properties of food constituents due to processing.
- CO-4. Discuss the various processing and preservation method.
- CO-5. Compare processing and preservation techniques to develop safe and healthy food products with maximum retained nutrient value.

Course Outcomes (COs)

Course Title & Code: Food Biochemistry (FNC502A)

After undergoing this course students will be able to:

- CO-1. Explain the physico-chemical properties of water, cell structure and functions of cellular organelles
- CO-2. Outline the classification, chemical properties, general reactions, digestion, absorption and metabolism of carbohydrates, lipids and proteins
- CO-3. Summarize biological functions of enzymes, vitamins, minerals, nucleic acids and their application in food processing
- CO-4. Illustrate various pathways involved in metabolism of carbohydrates, proteins and lipids
- CO-5. Analyze and apply suitable method for quantitative analysis of carbohydrates, proteins, lipid and enzymes


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Course Outcomes (COs)

Course Title & Code: Advanced Nutrition (FNC503A)

After undergoing this course students will be able to:

- CO-1. Describe the physiological and metabolic role of macronutrient, micronutrient and other food components in human nutrition.
- CO-2. Understand the basis of nutrient requirements and recommendations.
- CO-3. Explore the sources, functions, deficiencies, and toxicity of various nutrients.
- CO-4. Analyze macronutrient and micronutrients in food.
- CO-5. Apply acquired knowledge and skills in developing dietary guidelines and program planning.

Course Outcomes (COs)

Course Title & Code: Nutrition during lifecycle and diet management (FNC504A)

After undergoing this course students will be able to:

- CO-1. Describe the concept of meal planning and balance diet.
- CO-2. Identify physiological changes during various stages of life cycle.
- CO-3. Understand the role of nutrition and major nutritional concerns during different lifestages.
- CO-4. Design meal plan to meet the nutrition requirement of human body during various stages of life cycle.

Course Outcomes (COs)

Course Title & Code: Human Physiology and Anatomy (FNC505A)

After undergoing this course students will be able to:

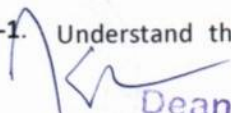
- CO-1. Describe the anatomy and physiology of various organs.
- CO-2. Understand functional organization and normal functioning of all the organ systems and their interactions in the human body.
- CO-3. Analyze the alterations of structure and function in various organs and systems during disease conditions and relate with physiological, pathological and environmental conditions.

Course Outcomes (COs)

Course Title & Code: Medical Nutrition Therapy – I (FNC506A)

After undergoing this course students will be able to:

- CO-1. Understand the etiology, physiological and metabolic anomalies of acute and chronic


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diseases and patient needs in different disease conditions.

- CO-2. Analyze the preventive and therapeutic role of diet and nutritional care.
- CO-3. Recommend different nutritional support systems to nourish the patient based on pathophysiology and treatment of various diet-related disorders.
- CO 4. Plan nutritional care, support and intervention process in hospice setting.
- CO 5. Understand trends and advances in dietary management of diseased conditions, emerging modes of therapy and intervention and ongoing research in the field

Course Outcomes (COs)

Course Title & Code: Medical Nutrition Therapy – II (FN FNC507A)

After undergoing this course students will be able to:

- CO-1. Understand the preventive and therapeutic role of diet and nutritional care in chronic degenerative diseases.
- CO-2. Analyze the etiology, diagnosis, pathophysiology, nutritional and lifestyle management of non-communicable diseases based on patient's needs.
- CO-3. Recommend and provide appropriate nutritional care based on pathophysiology, prevention/ and treatment of the various diet-related disorders/ diseases.
- CO 4. Understand trends and advances in dietary management of non- communicable and lifestyle diseases, emerging modes of therapy and intervention and ongoing research in the field.

Course Outcomes (COs)

Course Title & Code: Public health nutrition and Epidemiology (FNC508A)

After undergoing this course students will be able to:

- CO-1. Understand the concept and current concerns in public health nutrition.
- CO-2. Learn about the national health care delivery system, government policies and programmes aimed at improving health and nutritional status of the population.
- CO-3. Analyze the importance of inter-sectoral and intra-sectoral linkages in improving nutrition.
- CO 4. Evaluate the role of epidemiological research in improving health systems and nutritional status of populations.
- CO 5. Develop skills in design and measurement of nutritional parameters in population-based studies of health and disease.




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Course Outcomes (COs)

Course Title & Code: Holistic Nutrition and Dietetics (FNC509A)

After undergoing this course students will be able to:

- CO-1. Describe the dimensions of holistic health.
- CO-2. Identify the ayurvedic principles for diet and healthy living.
- CO-3. Evaluate and discuss the emerging trends in the field of integrative well-being.
- CO 4. Design practical dietary guidelines and holistic lifestyle recommendations to promote well-being.

Course Outcomes (COs)

Course Title & Code: Applied Food Science and Functional Food Development (FNC510A)

After undergoing this course students will be able to:

- CO-1. Understand the effect of processing treatment on functional ingredients.
- CO-2. Critically discuss steps involved in developing or improving functional food product.
- CO-3. Define and rationalize development of new or improved functional food products and influence of future trends.
- CO 4. Design concept, prototype and pilot scale up of a product.
- CO 5. Integrate the concept of IPR, food licensing and regulations with product development.

Course Outcomes (COs)

Course Title & Code: Applied Food Microbiology (FNC511A)

After undergoing this course students will be able to:

- CO-1. Explain the techniques of microbiological examination.
- CO-2. Describe the microflora of fresh food and food preservation technologies.
- CO-3. Discuss quality control/quality assurance Legislation for food safety.
- CO 4. Prepare various media for cultivation of microorganisms.
- CO 5. Demonstrate staining, isolation and bacteriological analysis.

Course Outcomes (COs)

Course Title & Code: Research Methodology and Biostatistics (FNC512A)

After undergoing this course students will be able to:

- CO-1. Identify methods of research in nutrition and their design strategies.
- CO-2. Discuss statistical tools and their application in analysis and interpretation of result.
- CO-3. Describe the scope, relevance and mandatory steps of research.


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- CO 4. Demonstrate strict adherence to ethical norms and standards in research.
- CO 5. Develop well-structured research proposal and technically communicate the research findings.

Course Outcomes (COs)

Course Title & Code: Nutrition Counselling and Entrepreneurship (FNC601A)

After undergoing this course students will be able to:

- CO-1. Understand the principles and procedures of nutrition counseling and the role of counselor.
- CO-2. Learn various counseling techniques.
- CO-3. Develop an understanding how acute and chronic disease affects the short term and long term emotional and psychological state and behavior of the individuals.
- CO 4. Use various types and techniques of counseling to motivate patients to achieve well-being.
- CO 5. Develop entrepreneurial skills to create business plan and become successful nutripreneurs.

Course Outcomes (COs)

Course Title & Code: Group Project (FNP601A)

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

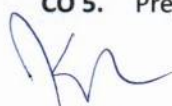
- CO-1. Critically review scholarly literature collected from various sources for the project purpose and formulate a research problem.
- CO-2. Prepare and present a research proposal.
- CO-3. Conduct research to achieve research objectives.
- CO 4. Propose new ideas/methodologies or procedures for further improvement of the research undertaken.
- CO 5. Create research document and write research papers for publications.
- CO 6. Defend the research findings in front of scholarly audience

Course Outcomes (COs)

Course Title & Code: Dissertation and Publication (FNP602A)

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

- CO-1. Integrate theory and practice at workplace in assigned job functions.
- CO-2. Assess career options, interests and abilities in their field of study to achieve professional and educational advancement.
- CO-3. Exhibit critical thinking and problem solving skills by analyzing underlying issue/s to challenges.
- CO 4. Develop right work attitude, inter-personal skills and ability to work as a team by engaging harmoniously with different stakeholders.
- CO 5. Prepare and present case study/report.


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Course Outcomes (COs)

Course Title & Code: Nutrition in Sports and Exercise (FNE501A)

After undergoing this course, students will be able to:

- CO-1. Understand the integrated functions of musculoskeletal systems in controlling movement.
- CO-2. Discuss the concept of fitness and exercise in prevention and management of chronic degenerative diseases.
- CO-3. Explain the special nutritional requirements for physical activities related to sports and exercise.
- CO 4. Apply the knowledge of nutrition and hydration to improve the health and performance of sportspersons.

Course Outcomes (COs)

Course Title & Code: Innovation and Entrepreneurship (FNE502A)

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

- CO 1. Describe the phases of product life cycle and role of innovation in product management.
- CO 2. Discuss the entrepreneurial traits and characteristics of an enterprises / businesses.
- CO 3. Identify opportunities for new product development.
- CO 4. Apply product and innovation management concepts for product development process.
- CO 5. Assess innovative ideas and strategies for nurturing an enterprise.

Course Outcomes (COs)

Course Title & Code: Nutraceuticals and Functional Foods (FNE503A)

After undergoing this course students will be able to:

- CO 1. Discover different nutraceutical and function food
- CO 2. Describe the role of nutraceuticals and functional foods in health and disease
- CO 3. Explain the role of nutraceuticals in angiogenesis
- CO 4. Integrate the acquired knowledge in formulating functional foods

Course Outcomes (COs)

Course Title & Code: Nutraceuticals and Functional Foods (FNE503A)

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

- CO 1. Explain DNA replication, transcription, translation and recombinant DNA technology.
- CO 2. Summarize applications of biosensors, immobilized enzymes, single cell proteins and nanotechnology in food industry.


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- CO 3. Discuss role and impact of biotechnology in nutritional quality of foods.
- CO 4. Describe biosafety guidelines and regulations for genetically modified foods.

Course Outcomes (COs)

Course Title & Code: Paediatric and geriatric diabetic nutrition care (FNE601A)

After undergoing this course students will be able to:

- CO 1. Describe the multifaceted aspects and specific needs of childhood and old age years.
- CO 2. Understand the effects of various diseases on nutritional status and importance of nutritional care and nourishment of children and elderly with various ailments.
- CO 3. Recommend appropriate nutritional care based on pathophysiology, prevention and/or treatment of the various diet-related disorders/ diseases.
- CO 4. Describe Diabetes, its various types, broad management plan and role of diabetes educators.
- CO 5. Demonstrate the ability to understand clinical and technical skills essential in providing education to the diabetic or pre diabetic patients.

Course Outcomes (COs)

Course Title & Code: Program Planning and Nutrition Education in Community (FNE602A)

After undergoing this course students will be able to:

- CO 1. Discuss importance of nutrition education in health promotion.
- CO 2. Indicate factors effecting behavioral change.
- CO 3. Discover crucial steps in program planning.
- CO 4. Design means of effective communication.
- CO 5. Develop effective grant proposal to acquire funding for intervention program.

Course Outcomes (COs)

Course Title & Code: Maternal and child nutrition care (FNE603A)

After undergoing this course students will be able to:

- CO 1. Understand the inter-relationship between nutrition and growth and development.
- CO 2. Explain altered growth and developmental changes from conception.
- CO 3. Evaluate government policies, community and public nutrition/health programs aimed at improving health and nutritional status of pregnant, lactating women and children under 5 years of age.
- CO 4. Assess health nutritional parameters in population based studies of health and disease.


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Course Outcomes (COs)

Course Title & Code: Advances in Fermentation Technology (FNE604A)

After undergoing this course students will be able to

- CO 1. Understand the basics and principle of fermentation technology.
- CO 2. Discuss the processing, manufacture, storage and packaging of different food products.
- CO 3. Demonstrate the preparation of various fermented food products.
- CO 4. Analyze the advanced technologies in microbiology and fermentation.

Course Outcomes (COs)

Course Title & Code: Nutrigenomics (FNE605A)

After undergoing this course students will be able to:

- CO 1. Explain the interactions of micronutrients with human disease states.
- CO 2. Describe the influence of genetic variation on nutritional requirement and the regulation of genetics on cellular and molecular metabolism.
- CO 3. Distinguish between the various technologies used in nutrigenomics.
- CO 4. Explain the significance of nutrigenomics for public health, industries and health professionals



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