



NIRMALA NIKETAN INSTITUTE'S
**COLLEGE OF HOME SCIENCE,
NIRMALA NIKETAN**

Affiliated to the University of Mumbai

NAAC Accredited 'A+' Grade

49, New Marine Lines, Churchgate, Mumbai - 400 020. ☎ 2207 6503 / 2200 7544
Email: principal@nnchsc.edu.in / office@nnchsc.edu.in Web.: www.nirmalaniketan.com

**Syllabus for Entrance Exam for M.Sc. in Food Preservation and Processing, M.Sc. in
Sports Nutrition and Post Graduate Diploma in Dietetics and Applied Nutrition.**

(2025-2026)

Objectives:

- To assess the student's understanding of fundamental concepts in foods, nutrition, and dietetics.
- To evaluate readiness for advanced postgraduate studies.
- To test logical thinking, language proficiency, and general knowledge – that is generally applicable to professional life as well as specialisation specific
- To ensure a holistic foundation covering all aspects of Foods, Nutrition and Dietetics

Note:

1. Knowledge, skills and applications for basic concepts in the domains listed below will be assessed
2. Format of the paper will be MCQ – that test memory and retention, analysis and applications
3. Each specialization entrance paper will have a slightly greater emphasis with respect to relevant domains
4. MSc in Food Processing and preservation will have a slightly greater emphasis on domains of Foods Science, microbiology, food preservation, food processing: MSc in Sports Nutrition will have a greater emphasis on physiology, exercise physiology, muscle, skeletal and cardiac physiology; P.G. Diploma in Dietetics and Applied Nutrition – Nutrition through the life cycle, clinical nutrition and Diet therapy, Community Nutrition.

Domain	Topics
Physiology	Fundamental concepts of - Digestive System, Circulatory System, Respiratory System, Renal System, Endocrine System, Nervous System and Homeostasis and feedback mechanisms
Biochemistry	<ul style="list-style-type: none">• Classification, structures and metabolism of carbohydrates, proteins, fats, nucleic acids.





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	<ul style="list-style-type: none">• Metabolic role of various hormones & Endocrine disorders• Acid Base Balance• Fluid and Electrolyte balance• Enzymes - Classification, structure, function and kinetics• DNA and Nucleic acids – structure and functions, overview of inborn errors of metabolism
Human Nutrition	<ul style="list-style-type: none">• Components of Energy expenditure – Basal metabolic rate, thermogenic effect of food, physical activity – concept, factors affecting and estimating expenditure and requirements• Macronutrients: carbohydrates, proteins, fats - digestion, absorption, functions, deficiencies, sources, overview of requirements• Micronutrients: major vitamins and minerals – functions, deficiencies, toxicities, sources, overview of requirements• Interrelationships between nutrients• Functional foods
Nutrition Across the Life Cycle	<ul style="list-style-type: none">• Nutritional needs across stages: infancy, childhood, adolescence, adulthood, elderly.• Maternal nutrition (pregnancy and lactation).• Geriatric nutrition basics.
Clinical Nutrition	<ul style="list-style-type: none">• Diet therapy principles: modification of normal diets.• Overview of preventive and therapeutic nutrition with respect to basic concepts of etiology, symptoms, diagnosis and diet therapy for - Obesity, diabetes, metabolic syndrome and cardiovascular diseases; GI disorders, liver diseases, renal diseases; HIV, infections, cancer• Nutrition support: enteral and parenteral nutrition basics.





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Food Science	<ul style="list-style-type: none">• Composition and nutritive value of foods belonging to different food groups• Cooking methods• Key changes in food during processing and cooking- browning reactions, gelatinization, dextrinization, gluten formation, denaturation, coagulation• Sensory and objective evaluation
Food Preservation and Microbiology	<ul style="list-style-type: none">• Techniques of preservation- use of fermentation, additives, high temperature, low temperature, dehydration, concentration, ionizing radiations and other emerging techniques• Major groups of microorganisms- classification, morphology, reproduction, growth requirements.• Intrinsic and Extrinsic parameters of food that affect microbial growth• Food Borne Illness
Food Processing	<ul style="list-style-type: none">• Basics of processing technology of different food groups
Community Nutrition	<ul style="list-style-type: none">• Anthropometry ABCD approach• Growth Monitoring• Public Health Problems in India - Vitamin A deficiency, Nutritional Anemias, Iodine deficiency disorders, Vitamin D deficiency, Non-Communicable diseases• Nutrition programs• Important agencies involved in Health and nutrition – nationally and globally
Food Production and Service	<ul style="list-style-type: none">• Purpose and goals of institutional food service.• Food safety, hygiene, laws (FSSAI basics), HACCP.• Facility and kitchen planning.• Procurement, storage, inventory control.





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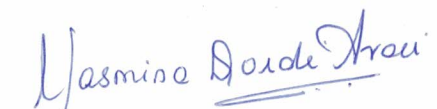
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	<ul style="list-style-type: none">• Menu planning, recipe standardization, quantity cooking principles.
Concepts of Entrepreneurship	<ul style="list-style-type: none">• Concepts of entrepreneurship.• Basics of business planning: project formulation, funding sources.• Marketing principles: 4Ps (Product, Price, Place, Promotion).• Human Resource basics: recruitment, training, appraisal.• Financial basics: costing, budgeting, profit calculation.
General Knowledge	<ul style="list-style-type: none">• Recent local, national and global events that are milestones and can significantly affect life and specifically aspects of Foods, Nutrition and Dietetics – its applications in industry and communities as well as sustainability and health
Logic	<ul style="list-style-type: none">• Logical reasoning (patterns, analogies, sequences, cause-effect).
Language Proficiency	<ul style="list-style-type: none">• Vocabulary related to health and food.• Basic grammar and sentence correction.


Dr. Yasmina Dordi Avari
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Dr. Asha Mathew
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