NIRMALA NIKETAN INSTITUTE'S
COLLEGE OF HOME SCIENCE
NIRMALA NIKETAN
AFFILIATED TO THE UNIVERSITY OF MUMBAI
NAAC Accredited 'A+' Grade

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Syllabus for Entrance Exam for MSc in Foods, Nutrition and Dietetics

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 general 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

Domain	Topics
Physiology	Fundamental concepts of - Digestive System, Circulatory System, Respiratory System, Renal System, Endocrine System, Nervous System and Homeostasis and feedback mechanisms
Biochemistry	• Classification, structures and metabolism of carbohydrates, proteins, fats, nucleic acids. • 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	• 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

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	• Micronutrients: major vitamins and minerals – functions, deficiencies, toxicities, sources, overview of requirements • Interrelationships between nutrients • Functional foods
Nutrition Across the Life Cycle	• Nutritional needs across stages: infancy, childhood, adolescence, and adulthood, elderly. • Maternal nutrition (pregnancy and lactation). • Geriatric nutrition basics.
Clinical Nutrition	• 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.
Food Science	• 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	• 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	• Basics of processing technology of different food groups
Community Nutrition	• Anthropometry ABCD approach • Growth Monitoring

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	• 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	• Purpose and goals of institutional food service. • Food safety, hygiene, laws (FSSAI basics), HACCP. • Facility and kitchen planning. • Procurement, storage, inventory control. • Menu planning, recipe standardization, quantity cooking principles.
Concepts of Entrepreneurship	• 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	• 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	• Logical reasoning (patterns, analogies, sequences, cause-effect).
Language Proficiency	• Vocabulary related to health and food. • Basic grammar and sentence correction.

Ms. Vibha Hasija
Head of the Department
(Foods, Nutrition and Dietetics)

Dr. Asha Mathew
Principal