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(Accredited by NAAC with Grade A+)

GU/Acad –PG/BoS- CDT /2025-26/595 Date: 28.11.2025

CIRCULAR

The syllabus for the Change in Discipline Test (CDT) of **Master of Science in Food Technology** Programme, approved by the Academic Council in its meeting held on 7th November 2025 is attached.

The Dean/Vice-Dean (Academic) of the School of Biological Sciences and Biotechnology and the Principals of all the affiliated Colleges are requested to take note of the above and bring the contents of this Circular to the notice of all concerned, including students aspiring to pursue the Master's Programmes.

ASHWIN VYAS LAWANDE
Digitally signed by ASHWIN VYAS LAWANDE
Date: 2025.11.28 11:30:19 +05'30'

(Ashwin V. Lawande)
Deputy Registrar – Academic

To,
1. The Dean, School of Biological Sciences and Biotechnology, Goa University.
2. The Vice-Dean (Academic), School of Biological Sciences and Biotechnology, Goa University.
3. Principals of all the affiliated Colleges.

Copy to:
1. Controller of Examinations, Goa University.
2. Assistant Registrar (Admissions), Goa University.
3. Assistant Registrar Examinations (UG/PG), Goa University.
4. Director, Directorate of Internal Quality Assurance, Goa University for uploading the Syllabus on the University website.

GOA UNIVERSITY

SYLLABUS FOR CHANGE OF DISCIPLINE TEST (CDT)
FOR MASTER OF SCIENCE IN FOOD TECHNOLOGY PROGRAMME

Effective from AY: 2026-27

Modules	Content
Module 1:	**Fundamentals of Food Science and Technology** Cereals, millets, pulses, oilseeds, fruits and vegetables, plantation crops (coconut, areca nut, spices, etc.), dairy, meat and poultry: composition and classification. Water: Structure and properties of water: bound, free water, pH, buffer systems, Colligative properties and their food relevance Nutrition: Recommended Dietary Allowances: Carbohydrates, proteins, fats & lipids, vitamins & minerals Mammalian Physiology: Digestion, Circulation, Muscle Physiology, and Osmoregulation, Nervous and Endocrine Systems, Reproduction Food Quality and Analysis: Proximate composition analysis, Moisture, protein (Kjeldahl), fat (Soxhlet), ash, carbohydrate estimation, Sensory evaluation principles, Food rheology and texture analysis Food Packaging: Types of packaging materials and their properties, MAP (Modified Atmosphere Packaging), CAP (Controlled Atmospheric Packaging), Active and intelligent packaging concepts Applied Food Chemistry: Chemical changes during processing and storage, Interaction among food components, Food fortification and formulation chemistry. Food Act, Regulatory & Monitoring Organisations and their functions
Module 2:	**Principles of Food Technology** Food dispersions, minimal processing methods, material handling and separation processes. Unit operations: cleaning, peeling, blanching, pasteurization, sterilization, freezing, drying, extrusion, Refrigeration and freezing principles, Canning and dehydration technologies Industrial Processing Techniques: Dairy (cheese, curds, yoghurt); Beverages (wine, beer, coffee); Cereals (bread, cakes); Food Fermentation-Microbial cultures in food fermentation and their maintenance; Traditional fermented foods of India - fermented foods based on milk, meat, and vegetables; fermented beverages; Probiotics and Prebiotics; Improvement

Approved by: Academic Council on 7th November 2025

	in food production - Tissue Culture, Single Cell Protein, Biofortification, Apiculture and Animal husbandry Enzymes in Foods: Classification, properties, and kinetics, Role in food processing (amylases, proteases, lipases, pectinases, oxidases), Enzyme inhibition and immobilization
Module 3:	**Food Spoilage, Food Preservation, and Food-Borne Diseases** Food spoilage: microbial, enzymatic, chemical, physical Principles of Food Preservation, Water Activity and its significance in food preservation, Overview of the Traditional and Modern Methods of Food Preservation, Natural and Chemical Food Preservatives; Thermal Preservation, Preservation using Low Temperatures, Microwave Processing, Hurdle Technology, Irradiation, Biopreservation, High-Pressure Food Preservation, Membrane Technology, Cold Plasma Technology, Enzymes and Microbes in Food Preservation Classification and causes of food-borne diseases: Bacterial, Fungal, Viral, Protozoal, Toxins
References/ Readings:	1. Coultate, T. P. (2022). *Food: The chemistry of its components* (7th ed.). Royal Society of Chemistry. 2. Fellows, P. J. (2023). *Food processing technology: Principles and practice* (5th ed.). CRC Press. 3. Food Safety and Standards Authority of India (FSSAI). (2024). *Food Safety and Standards (Amendment) Act, 2023.* Government of India. 4. Jay, J. M., Loessner, M. J., & Golden, D. A. (2021). *Modern food microbiology* (9th ed.). Springer. 5. Nielsen, S. S. (2023). *Food analysis* (6th ed.). Springer Nature. 6. Potter, N. N., & Hotchkiss, J. H. (2021). *Food science* (6th ed.). Springer. 7. Robertson, G. L. (2023). *Food packaging: Principles and practice* (4th ed.). CRC Press. 8. Shafiur Rahman, M. (2023). *Handbook of food preservation* (3rd ed.). CRC Press. 9. Srilakshmi, B. (2023). *Food science* (9th ed.). New Age International Publishers. 10. Tamang, J. P. (2023). *Fermented foods and beverages of the world* (2nd ed.). CRC Press.