

# UNIVERSITY OF CALCUTTA



**GURUPADA SAREN**  
**SECRETARY**

COUNCILS FOR UNDERGRADUATE STUDIES,  
UNIVERSITY OF CALCUTTA.

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**SENATE HOUSE**

Kolkata – 700 073.

Phone : 2241-0071-74,  
2241-0077-78,2241-4989-90,  
2241-2850-51,2241-2859

Fax : 91-033-2241-3222

E-mail : u.g.councilsc.u@gmail.com

Website : www.caluniv.ac.in

## **CORRIGENDUM**

It is notified for all concerned that inadvertently the syllabus of FNTA-DSE-B (DSE papers, Group-B of Food & Nutrition (Honours), for Semester-5 & 6 under CBCS) was wrongly printed in the University notification no.CUS/394/18, dt. 12.06.2018 & CSR/12/18, dt. 04.6.2018) .

The correct syllabus of DSE (Group-B) of Food & Nutrition (Honours) is annexed herewith.

  
19/01/2021  
Secretary

## DSE-B

### **FNTA-DSE-B-5-1 Th: FOOD SAFETY AND QUALITY CONTROL 4 CREDITS**

1. **Introduction to Food Safety:** Definition, types of hazard-physical, chemical and biological, factors affecting Food Safety.
2. **Food Hazards:** types of hazard. Physical, chemical hazards (naturally occurring, environmental and intentionally added) and biological (food borne pathogens-bacteria, viruses and eukaryotes; sea food and shellfish poisoning and mycotoxins) hazards.
3. **Management of Food Hazard:** Need, control of parameters, temperature control, Food storage.
4. **Hygiene and Sanitation:** Sources of contamination, Control methods using physical and chemical agents,waste Disposal, pest and rodent Control, Personnel Hygiene.
5. **Food Safety Management Tools:** Basic concept, prerequisites-GHPs,GMPs. HACCP ,ISO series,TQM - concept and need for quality, components of TQM. Risk Analysis
6. **Food laws and Standards:** International Food Standards-ISO and Codex Alimentarius. National Food Standards ( BIS, AGMARK) and Food Laws ( PFA and FSSAI).

### **FNTA-DSE-B-5-1-P: FOOD SAFETY AND QUALITY CONTROL (PRACTICAL) 2 CREDITS**

Preparation of project on the above topics and demonstration/ presentation.

### **FNTA-DSE-B-5-2-Th : FUNCTIONAL FOODS AND NUTRACEUTICALS**

1. Background, status of nutraceuticals and functional food market, definitions, difference between nutraceuticals and functional foods, types of nutraceutical compounds and their health benefits, current scenario.
2. **Nutraceuticals:** Types of nutraceutical compounds – Phytochemicals, phytosterols and other bioactive compounds, peptides and proteins, carbohydrates (dietary fibers, oligosaccharides and resistant starch), prebiotics, probiotics and symbiotic, lipids (Conjugated Linoleic Acid, omega-3 fatty acids, fat replacers), vitamins and minerals; their sources and role in promoting human health.

3. **Functional Foods:** Cereal and cereal products, Milk and milk products, egg, oils, meat and products, sea foods, nuts and oilseeds, functional fruits and vegetables, herbs and spices, beverages (tea, wine etc), Fermented foods – their health benefits and role in conditions like cardiovascular diseases, hypertension, diabetes etc. Future prospects of functional foods and nutraceuticals and their potential for use in improving health.

**FNTA-DSE-B-5-2-P: FUNCTIONAL FOODS AND NUTRACEUTICALS  
( PRACTICAL)**

Preparation of project on the above topics and demonstration/presentation.

**FNTA-DSE-B-6-3-Th: FOOD FERMENTATION**

**4 CREDITS**

1. Food Fermentation- definitions, microorganisms used for food fermentation, and advantages of fermentation.
2. Batch, Fed batch and Continuous culture. Open and closed system, growth phases Product formation in microbial cultures, factors affecting product formation.
3. Study of a Bio fermentor – its design and operation, Down Stream Processing and Product recovery
4. Starter cultures, fermentation starters used in different cereal products
5. Production of Baker's Yeast
6. Production and nutritional significance of fermented milk products and vinegar.
7. Development of a fermented soya products- tofu, natto, miso, tempeh, soy sauce and vegetable products – sauerkraut and kimchi. Nutritional significance of the above products.

**FNTA-DSE-B-6-3-P: FOOD FERMENTATION (PRACTICAL)**

**2 CREDITS**

1. Demonstration of hygienic handling of equipment and utensils during food fermentation process.
2. Preparation of fermented food- Dahi and yogurt
3. Preparation of fermented vegetable pickles.
4. Preparation of different food items from fermented products.

**FNTA-DSE-B-6-4-Th: FOOD PACKAGING**

**4 CREDITS**

1. Introduction to Food Packaging: Definition, functions and requirements for effective packaging.
2. Classification of Packaging: Primary, secondary and tertiary packaging. Flexible, rigid and Semi- rigid packaging.
3. Materials for food packaging, types, uses, merits, drawbacks. Paper, Glass, Tin, Aluminum, Plastic, Boxes, Jars, Cans, Bottles
4. Interaction of packages with foods, Tin can corrosion, Global migration of plastics.
5. Modern Concepts of Packaging Technology: Aseptic packaging, Form Fill Seal packaging Edible Films. Vacuum, Controlled atmospheric Packaging, Retort Pouches, Active & intelligent packaging systems. Easy - Open End, Boil in-bags, Closures.
6. Quality Testing of Packaging Materials: Physical test for tin and plastic Testing of glass containers Physical and chemical test for plastics
7. Shelf life testing of different packaged foods: Tin, Plastic, Oxygen interactions, moisture interchanges and aroma permeability.

**FNTA-DSE-B-6-4-P: FOOD PACKAGING (PRACTICAL)**

**2 CREDITS**

1. Familiarization of types of packaging materials
2. Identification and chemical resistance of plastic film
3. Study of food labeling of different packaged products
4. Pre-packaging of vegetables.
5. Market survey on different types of food packaging