

**SEMESTER 2<sup>nd</sup>**  
**MAJOR COURSE**

**FST222J: FOOD SCIENCE & TECHNOLOGY (PRINCIPLES AND TECHNOLOGY OF FOOD/FRUIT AND VEGETABLE PROCESSING)**

**CREDITS: THEORY-4 PRACTICAL - 2**

**THEORY (4 CREDITS)**

**Objectives/Expected Learning**

- *To acquaint the students about the scope of food processing of industry in India*
- *To make students understand about the principles and methods of preservation fruits and vegetables*

**THEORY (4 CREDITS)**

**Unit – 1 (15 HOURS)**

**Introduction to Fruits and Vegetables**

- Definition and classification of fruits and vegetables
- Nutritional Significance of fruits and vegetables
- Production and post-harvest losses in fruits and vegetables
- Maturity and ripening of fruits and vegetables
- Post-harvest physiology of fruits and vegetables, respiration and transpiration

**Unit-2 (15 HOURS)**

**Spoilage and Packaging of Fruits and Vegetables**

- Spoilage of fruits and vegetables and its causes
- Postharvest handling of fruit and vegetable
- Packaging requirement of fruits and vegetables: Types of packaging materials used in fruits and vegetables.
- Storage of fruits and vegetables. Refrigerated and hypobaric storage, CA storage
- Minimal processing of fruits and vegetables

**Unit –3 (15 HOURS)**

**Processed Products of Fruits and Vegetables**

- Principle of preservation of fruits and vegetables
- Processed products of fruits and vegetables (jam, jelly, marmalade, juice, nectar, candy, sauce, chutney and pickles).
- Tomato products: Puree, ketchup and cocktail.

**Unit – 4 (15 HOURS)**

**Preservation Technologies**

- Quality evaluation of fruit and vegetable base processed products
- Basic concept in drying, dehydration, freezing and canning of fruits and vegetables.
- Requirements for fruit and vegetable-based processing plant.
- Plant layout and design for fruit and vegetable-based processing plant.
- Waste management in fruit and vegetable industry.

**PRACTICALS (2 CREDITS: 60 HOURS)**

1. Preparation of lemon squash
2. Preparation of jam and preserves.
3. Preparation of tomato sauce/ketchup
4. Preparation of fruit and vegetable pickle
5. Preparation and preservation of fruit juice.
6. Drying of bottle gourd.
7. Preparation of syrup & brine solutions.
8. Cut out analysis of canned fruits & vegetables.
9. Project formulation for a fruit and vegetable-based processing plant.
10. Quality evaluation of processed products: TSS, acidity.
11. Sensory evaluation of products