B. Sc 4th SEMESTER
CORE

FT420C: FOOD SCIENCE & TECHNOLOGY: PROCESSING OF FOODS OF PLANT ORIGIN

CREDITS: THEORY-4, PRACTICAL -2

THEORY (4 CREDITS): 60 HOURS **MAXIMUM MARKS: 60, MINIMUM MARKS: 24**

Objectives/Expected Learning

To make the students understand about production, composition and processing of various staple food crops
To acquaint the students about production, post-harvest physiology and processing of different fruits and vegetables

Unit – 1 (15 MARKS)

- Production trends of different cereals.
- Chemical composition and nutritional significance of cereals, pulses and oils seeds.
- Structure of cereal grains-wheat, rice and maize.
- Milling of wheat and rice

Unit – 2 (15 MARKS)

- Status of bakery Industry in India
- Requirements of setting a bakery plant.
- Specification of raw materials for bakery industry-flour, sugar, shortenings, yeast, salt.
- Additives used in bakery products, flour improvers and bleaching agents
- Manufacturing of bakery products-bread, biscuits and cakes.

Unit –3 (15 MARKS)

- Nutritional significance of fruits and vegetables.
- Post-harvest loses in fruits and vegetables.
- Post-harvest physiology and handling of fruits and vegetables, respiration, transpiration, etc.
- Maturity and ripening.
- Packaging requirements of fruits & vegetables.
- Storage of fruits and vegetables. Refrigerated and controlled atmospheric storage.

Unit – 4 (15 MARKS)

- Processed products of fruits and vegetables (jam, jelly, marmalade, sauce and pickles).
- Beverages: Juice, nectar, squash, cordial, concentrate
- Specifications of various fruit and vegetable products.
- Tomato products-puree, ketchup, cocktail.
- Processing of Mushrooms.
- Dehydration, freezing and canning of fruits and vegetables.
- Requirements for a fruit and vegetable based processing plant.

PRACTICALS (2 CREDITS: 60 HOURS) **MAXIMUM MARKS: 30, MINIMUM MARKS: 12**

1. Quality tests of wheat grain and flour
2. Quality tests of rice grain
2. Preparation & evaluation of bakery and confectionary products
    a. Bread
    b. Cake
    c. Biscuits
3. Identification and commentary on appliances used in a baking unit.
4. Preparation of preserves.
5. Preparation of squash.
6. Preparation of tomato sauce/ketchup
7. Preparation and preservation of apple juice.
8. Preparation of syrup & brine solutions
9. Cut out analysis of canned fruits & vegetables.
10. Project formulation for a fruit/vegetable/cereal based processing plant**.**

REFERENCES:

1. Food Processing Technology by P.J. Fellows
2. The Technology of Food Preservation by Desrosier
3. Food Science by N.N. Potter
4. Kent's Cereal Technology by Kent
5. Basic Baking by S. C. Dubey
6. Fruits vegetable preservation by Girdhari Lal, Siddhapa &Tandon
7. Fruit & Vegetable Preservation by Srivastra
8. Post-Harvest Technology of Fruits & Vegetables-L.R. Verma & V.K. Joshi