

B. Sc. 6th SEMESTER
DISCIPLINE SPECIFIC ELECTIVES (DSEs)

OPTION - I

FT617DA: PROCESSING OF FOODS OF ANIMAL ORIGIN

CREDITS: [4+2]

Unit-I

- Sources and composition of milk, nutritive value.
- Chemistry of Milk-Milk fat, proteins, lactose, vitamins, minerals & salts
- Processing of market milk- standardization, toning of milk, homogenization, Pasteurization, Sterilization.

Unit – II

- Storage, transportation and distribution of milk. Pasteurization and sterilization.
- Milk products - Processing of cream, condensed milk, evaporated milk, whole and skimmed milk, fermented milks; Butter and its manufacture.
- Cheese and its types,
- Production of Ice creams

Unit III

- Introduction to Indian Meat, Fish and Poultry Industry.
- Scope and problems faced by meat industry in J&K.
- Structure of Muscle; Slaughtering of meat animals. Post mortem changes in meat.
- Tenderization and aging of meat.
- Different cuts of lamb and their uses, post mortem changes.

Unit IV

- Preservation of meat by freezing, curing, pickling and smoking of meat.
- Traditional meat products of J&K.
- Structure, composition and nutritive value of eggs.
- Preservation of fish by freezing, glazing of fish, canning, smoking, freezing, irradiation and dehydration.
- Packaging requirements of meat and meat products.

PRACTICALS

1. Market survey of meat and milk products.
2. Preparation of various meat products such as: Meat pickle & traditional meat products.
3. Slaughtering of poultry and determination of meat to bone ratio.
4. Dressing of fish and calculation of dressing percentage.
5. Quality evaluation of eggs.
6. Evaluation of milk-total solids, fat.
7. Determination of acidity and specific gravity of milk.
8. Preparation of common milk products like Flavoured milks, Yoghurt, Butter, Ice-cream.
9. Visit to local milk processing plant and slaughterhouse.

References

1. 1 Outlines of Dairy Technology by S. K. De
2. Chemistry and Testing of Dairy products by H.V. Atherton & J.A. Newlander
3. Milk and dairy Product Technology by Edger Spreer.
4. Dairy Chemistry by H.H. Sommer
5. Lawre. R. A. & Ledward, D. A. (2006). Lawres Meat Science 7th Ed. Woodhead Publishing Company, Cambridge, England.
6. Throntons Meat Hygiene.
7. Principles of Meat Science by Forest.
8. Developments in Meat Science by Lawrie.
9. Processed Meats by Pearsons.

B. Sc. 6th SEMESTER
DISCIPLINE SPECIFIC ELECTIVE
OPTION -II

FT617DB: FOOD SCIENCE AND TECHNOLOGY: PRODUCTION AND CONSUMPTION TRENDS OF FOOD IN INDIA

[CREDITS: THEORY = 4, PRACTICAL = 2]

UNIT I

Historical milestones in Indian agriculture.

Contribution of Indian agriculture to the economic development of the country Production trends of cereals, pulses and oilseeds in India

Trends in the production of animal based products- milk, meat, egg, poultry, fish.

UNIT II

Status of hunger in India and its regional spread,

Shift from food security to nutritional security

Food availability and nutrients consumption

Consumption pattern of cereals, pulses and oilseeds in India.

Changes in consumption pattern of fruits, vegetables, eggs, milk and meat.

UNIT III

National food policy and its impact on food security and rural livelihoods,

Public distribution system-a key to achieve food security in India,

National Food Security Act, 2013.

UNIT IV

Global perspectives of food security, WTO and its impact on food security, Climate change and food security.

Shift in production towards non-food crops and resultant utilization of food crops for non-food purpose.

Postharvest management of food as tool for food and nutritional security.

Scenario of food processing industries in India- Challenges and Opportunities,

Tutorials (2 Credits)

Current international and national production of different cereals, pulses and oilseeds.

Current international and national production of fruits, vegetables, eggs, milk and meat.

Postharvest losses of foods in world in India (Current year)

Availability of different food items in India (Current year)

References

1. Food Security in the Developing World by John Ashley
2. Sustainable Agriculture Towards Food Security by M.S. Swaminathan
3. Food security in Asia by Amitava Mukherjee SAGE publications India Pvt Ltd.
4. Attaining Food Security by Alka Parikh Kalpaz Publications
5. The Hindu, Review of Indian Agriculture