

## Introduction to Food Science and Technology

Course Code	Title of Course	Credit Hours
FST-101	Introduction to Food Science and Technology	3(2-1)

### Learning outcomes:

Students will be able to:

- Understand the food processing and technology
- Learn the diversity of food processing methods
- Understand the applications of food technology
- Understand the factors affecting the choice of food processing methods applied in various industries

### Course contents:

#### Theory:

Introduction: food science and technology, food processing and preservation; Food safety and security; Food sources and global food situation; Food constituents and their functions: water, carbohydrates, lipids, proteins, vitamins and minerals; Food classification based on perishability and pH; Spoilage agents in food: enzymes, microorganisms, insects, rodents, birds and physical factors; Principles of food preservation; Preparatory operations in food processing; Food preservation techniques: high temperature - pasteurization, sterilization, canning, low temperature - refrigeration, freezing; Removal of moisture: drying, dehydration; use of chemical additives; Fermentation techniques — alcoholic, acetic, lactic; Irradiation technology; Food packaging and labelling.

#### Practical:

Bottling/canning of selected fruits and vegetables; Cold storage of fruits and vegetables; Freezing of fruits and vegetables; Dehydration of fruits and vegetables; Blanching of fruits and vegetables; Use of chemicals in preservation of food products; Preparation of fermented food products — vinegar preparation; Evaluation of bottled, frozen and dehydrated products.

### Suggested Readings Text Books:

1. Owusu-Apenten, R., & Vieira, E. R. (2022). *Elementary Food Science*. Springer.
2. Vaclavik, V. A., Christian, E. W., & Campbell, T. (2022). *Essentials of Food Science*. Springer.
3. Campbell-Platt, G. (2017). *Food Science and Technology* (2nd ed.). Wiley Publishers.

**Reference Books:**

1. Awan, J. A., & Rehman, S. U. (2014). *Food Analysis Manual*. Unitech Communications, Faisalabad, Pakistan.