

FST-101, Introduction to Food Science and Technology 3(2-1)

Educational Objectives: Food Science and Technology is designed to provide a practical and theoretical training on the conversion of raw agricultural produce into processed, packaged, shelf-stable food products and intermediate raw materials; different aspects of food preservation; establishment, maintenance and assurance of food quality.

Course outcomes:

1. Understanding the food processing and technology
2. Learning the diversity of food processing methods
3. Understanding the applications of food technology
4. Understanding the factors affecting the choice of food processing methods applied in various industries

Course contents:

- Introduction Food science
- Food technology
- Relationship with other disciplines
- Career opportunities.
- Significance of food science and technology.
- Global & national food and nutrition situation.
- Food industry: history, developments.
- Important food industries in Pakistan.
- Food sources: plants, animals, marine.
- Food constituents and their functions: water, carbohydrates, lipids, proteins, vitamins, minerals.
- Classification of foods: perishability, pH.
- Food spoilage agents: enzymes, microorganisms, insects, rodents, birds, physical factors. Principles of food preservation: prevention or delay of autolysis, microorganisms, pests, physical defects.
- Food poisoning: causes and remedies.

Practical:

- Use of laboratory equipments.
- Estimation of moisture, fat, protein, carbohydrates, fiber and ash in food samples. Determination of specific gravity, soluble solids, pH, acidity, total solids, refractive index and peroxide value.

Recommended Books:

1. Richard Owusu-Apenten, Ernest R. Vieira, Elementary Food Science, 2022, Springer
 2. Vickie A. Vaclavik, Elizabeth W. Christian, Tad Campbell, 2022, Essentials of Food Science, Springer
 3. Geoffrey Campbell-Platt, 2nd Edition, 2017, Food Science and Technology, Wiley Publishers
 4. Awan, J.A. and Rehman, S.U. 2014. Food analysis manual. Unitech Communications, Faisalabad-Pakistan.
- Penfield, M.P. and Campbell, A.M. 2014. Experimental food science (Food Science and Technology)