

CY344 Food Chemistry: Processing, Preservation and Storage

Credit: 3-0-0-3

Approval: Approved in 2nd Senate

Prerequisite: Consent of the faculty member

Students intended for: B. Tech.

Elective or Core: Elective

Semester: Odd/Even

Course content:

- **Water:** Water microstructure, Availability in Foods, Water activity, Food Stability, Moisture sorption, State diagrams and freezing, Molecular mobility and the glass transition, Example: Candy manufacturing, Emulsions and foams.
- **Proteins:** Amino Acids / Basic Building Blocks, Peptides and Proteins, Protein denaturation, Protein functionality, Emulsification, Nutritional Properties, Protein Modification, Processing and Storage, Browning reactions in foods.
- **Carbohydrates:** Monosaccharides, Disaccharides and Oligosaccharides, Polysaccharides, related reactions, dietary carbohydrates and their sources, functional properties of dietary carbohydrates.
- **Lipids:** Fatty acids, Glycerides, fat and oil processing, fatty acids in foods, rancidity and reversion of oils, enrobing fats.
- **Enzymes:** Specificity, Catalysis and Regulation, Temperature and pH, Water Activity, Electrolytes, endogenous enzymes in food, enzymes as food processing aids.
- **Vitamins and minerals:** Fat and water soluble vitamins, vitamins as food ingredients, major and trace minerals, minerals and canned food.
- **Flavor:** Taste, odor, description of food flavors.
- **Texture:** Its importance in food industries.
- **Color, additives and contaminants:** A brief introduction
- **Food spoilage:** Causes and remedies
- **Various techniques for food processing and preservations**
- **A brief introduction on food laws.**

Text & Reference Books:

Principles of Food Chemistry by [John M. Deman](#)

Fennistrema'S Food Chemistry, 4th Edition by [Srinivasan Damodaran](#), [Kirk Parkin](#), [Owen R. Fennema](#)

Food Chemistry by [David E. Newton](#)

Foy bod: The Chemistry Of Its Components by [Tom P. Coultate](#)

Experimental Food Chemistry by [Meenaksh iPaul](#)

Food Chemy [Shalini Saxena](#)

Effects Of Food Processing On Bioactive Compounds by [MeenakshiPaul](#)

Food processing and preservation by B. Sivasankar

Basics Of Food Chemistry by R. [Chaudhary](#)

Basic Food Chemistry by Frank A. Lee

Mechanism and theory in food chemistry by D. W.S.Wang

Fundamentals of food chemistry by J. Kaur

Other Faculty Members interested in teaching this course: Dr. Chayan K Nandi

Proposed by: Subrata Ghosh.

School: Basic Scinces