

Semester - IV

Course Title: Food Chemistry (Open Elective)	Course Code: 24MJCH4S
Total Contact Hours: 28	No. of Credits: 02
L:T:P	2:0:0
Internal Assessment Marks: Theory:10	Duration of SEE: 02 Hours
Semester End Exam Marks:	40

Course Outcomes (CO's):

1. Importance of chemistry behind the food will be taught
2. Elementary aspects of content of food and its processing will be taught
3. Importance of water in food and food adulterants will be taught

At the end of the course, students shall be able to:

1. Understanding the importance of food and its compounds.
2. Understanding the preliminary aspects of food and its processing.
3. Explain the importance of food adulterants in our daily life

Unit I

Introduction to Food Chemistry:

08 hours

Definition & scope, importance, Food as a system: cellular basis of plant, microbial & animal sources, physiology of vegetables & fruits, water activity.

Basic principles & roles of food production, processing & quality attributes

Unit II:

Components of Food

10 hours

Major food components: i) Carbohydrates- Definition, classification, examples. Function in foods as energy sources, structure & textures- Glucose, fructose & starch as examples. Processing & storage.

ii) Proteins: Amino acids, peptide bond elementary idea of structure, Functions in food & nutritional role, denaturation of proteins and coagulation.

iii) Lipids: Definition, fatty acids, triglycerides, phospholipids & sterols. Edible fats & oils, Functions in food- energy, structure & flavor. Oxidation & rancidity

iv) Minerals in food: main elements, trace & ultra trace elements 4 examples each & their functions, nutritional role of minerals

Unit III

Role of water in food:

10 hours

Elementary idea on structure of water, As solvent, reactant, water activity, influence on microbial growth and food spoilage. Determination of moisture content

Food Additives:

vitamins, amino acids & minerals, Aroma compounds and Colour agents, effect of food additives on preservation, health & toxicity

Food Analysis:

Reasons for food analysis, Analysis of mixtures in vegetable oils & spices,. Analysis of ash in honey, analysis of crude fibres in spices & condiments. Food adulteration: Common adulterants

in food. Contamination of food stuffs. Common micro organisms of food stuffs. Pesticide analysis in food products by TLC technique