

SRI VENKATESWARA UNIVERSITY:TIRUPATI
MINOR
SUBJECT: FOOD SCIENCE & TECHNOLOGY
W.E.F. AY 2023-24
COURSE STRUCTURE
SEMESTER-II

Year	Semester	Course	Title of the Course	No. of Hrs /Week	No. of Credits
I	II	1	Food Chemistry	3	3
			Food Chemistry Practical Course	2	1

Theory

Credits:3

3hrs/week

Learning Objectives

1. Understand the concepts of food constituents.
2. Exploring the techniques of food analysis.

Learning Outcomes

Upon successful completion of the course, a student will be able to:

1. To study about classification, structure and functions of Carbohydrates.
2. To study about classification, structure and function of Proteins
3. To study about classification, structure and functions of lipids
4. To study about classification and specificity of Enzymes.
5. To know about the fundamental principles of food analysis.

UNIT-I

Carbohydrates:

Definition, Classification, properties and uses of monosaccharides, disaccharides, oligosaccharides and polysaccharides and their uses—Reactions of carbohydrates: Hydrolysis, gelatinization, caramelization. Hydrophilicity, flavor ligands, Browning, Sweetness. Functions of Polysaccharides: Starch, Cellulose, hemi-cellulose, pentosans, pectin, gums.

Unit –II

Proteins: - Amino Acids: classification, chemical properties. Peptides and Proteins: Primary Structure- Denaturation. Functional Properties: Hydration, Solubility, Viscosity, Gelatin, Texturization , Emulsification, Foaming. Nutritional Properties. Protein Modification /Processing and storage.

Unit –III

Lipids:-

Lipids definition, classification with examples source and functions of fatty acids, Glycerides Phospholipids and sterols Physical Aspects: Triacylglycerol Distribution, Positional Distribution, Consistency, Emulsion and emulsifiers.

Unit- IV

Enzymes

: Definition, holoenzyme, apoenzyme, zymogen forms classification, specificity, catalysis and regulations Factors influencing activity: Temperature, p^H , water activity and ionic strength/electrolytes.

Unit- V

Basic Principles and techniques - Fundamental Properties /

Structure: Ice, Water - Availability in foods: Water composition - Effect of Water Activity on Food stability (Shelf life). Principles of Chromatography and Spectrophotometer.

REFERENCES

1. Nielsen SS., "Introduction to the chemical analysis of foods", Jone and Bartlett Publishers, London., 1994.
2. Biochemistry: Zubay G. William C Brown, New York. 1997

SRI VENKATESWARA UNIVERSITY:TIRUPATI
SEMESTER-II

COURSE3:FOOD CHEMISTRY (MINOR)

Practical

Credits:1

2hrs/week

1. Estimation of Titrable acidity in foods
2. EstimationofMoistureandtotalsolidsanalysis
3. EstimationofAshandAcid insolubleash
4. Identificationofcarbohydrates.
5. Qualitativetestsforproteins,aminoacids.
6. Qualitativetestsforlipids.