

SRI VENKATESWARA UNIVERSITY

Programme: B.Sc. Honours in Food Science & Technology (Major)

W. E. F. Ay 2023-24 (II-SEMESTER)

COURSE STRUCTURE

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

SEMESTER-II

COURSE3:FOOD CHEMISTRY

Theory _____ Credits:3 _____ 3hrs/week

Learning Objectives

1. Under stand 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, hemicellulose, 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 example source and functions of fatty acids, Glycerides Phospholipids and sterols. Physical Aspects: Triacylglycerol Distribution, Positional Distribution, Consistency, Emulsions and emulsifiers.

Unit- IV

Enzymes:-Definition, holo-enzyme, apo-enzyme, 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", Jones and Bartlett Publishers, London., 1994.
2. Biochemistry: Zubay G. William C Brown, New York. 1997

SEMESTER-II
COURSE3:FOOD CHEMISTRY

Practical

Credits:1

2hrs/week

1. Estimation of Titrable acidity in foods
2. Estimation of Moisture and total solids analysis
3. Estimation of Ash and Acid in soluble ash
4. Identification of carbohydrates.
5. Qualitative tests for proteins, amino acids.
6. Qualitative tests for lipids.

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SEMESTER-II

COURSE 4:HUMAN NUTRITION

Theory

Credits:3

3 hrs/week

Learning Objectives

To familiarize with the concepts of nutrition

Learning Outcomes

Upon successful completion of the course, the students will be able to

1. To Understand about Nutrition, and importance of food for Health
2. To Analyze about different vitamins and minerals and their importance
3. To know about Balanced diet and Recommended Daily Allowances
4. To study about diet surveys and Vitamin Deficiency Control Programmes
5. To gain knowledge about International agencies like WHO,FAO, UNICEF and CARE

Unit-I

Introduction to Human Nutrition-Basic definition and meaning of Nutrition, Over Nutrition, under nutrition, Health, Nutrients. Principle compounds in foods- classification of foods, Functions of food, Balanced Diet.

Unit-II

Nutrition during life span – Infants, pre-school children, school going children, adolescents, adults, old age, pregnancy, lactation and industrial workers; Recommended Dietary Allowances (RDA) & nutritional requirements for different age groups.

Unit-III

Macronutrients: Carbohydrates, Proteins, fats – Functions, sources, requirements, RDA, Deficiencies, excess and storage of each nutrient in the body.

Unit-IV

Micronutrients: Vitamins and minerals- Functions, Dietary sources, RDA, deficiencies, excess and storage of each micronutrient in the body.

Unit-V

Approaches to combat malnutrition (Govt& NGO), Food fortification, Supplementation and their role in prevention of malnutrition, Nutrition Education need and importance.

References:

1. Dietetics(2007)by B. Srilakshmi.
2. ICMR(2010).NutrientRequirementsandRecommendedDietaryAllowancesforIndians
3. Text Book of Human Nutrition (2010)by Bamji
4. Essentials of Human Nutrition(2007)by A.S.Truswell.
5. Nutrition &Dietetics 3rd edition Subhangini Joshi
6. Oxford Handbook of Nutrition and Dietetics(2012)Joan Webster
7. Sri lakshmi(2007).FoodScience,4thEdition.NewAgeInternational Ltd
8. IFCT(2017)Indian Food Composition Tables

SEMESTER-II
COURSE 4:HUMAN NUTRITION

Practical

Credits: 1

2hrs/week

1. Identification of food sources for various macronutrients nutrients using food composition tables.
2. Identification of food sources for various micronutrients nutrients using food composition tables.
3. Planning a diet for preschool & school going children (Packed lunch)
4. Planning diet for adult man/women.
5. Menu planning and preparation for - carbohydrate, protein rich foods.
6. Menu planning and preparation for - Calcium, Iron rich foods