ST. JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

VI SEMESTER **BIOCHEMISTRY** TIME: 3Hrs/Week

BCH A1 6801 (3) **INTRODUCTION TO FOOD TECHNOLOGY** Max.Marks:100

w.e.f. 2015-2018('15AC' batch) **SYLLABUS**

OBJECTIVES:

1. To understand the history and evolution of food processing.
2. To study the structure, composition, nutritional quality and post harvest changes of various plant foods.

COMPOSITIONAL, NUTRITIONAL AND TECHNOLOGICAL ASPECTS OF PLANT FOODS

UNIT - I: CEREALS MILLETS AND PULSES (22 LECTURES)

1. Introduction, structure, composition and uses and by-products of cereals and coarse cereals.
2. Wheat- Structure and composition of wheat, types (hard, soft/ strong, weak) Diagrammatic representation of longitudinal structure of wheat grain and process of malting, Gelatinization of starch, types of browning.
3. Rice- Composition of rice obtained by different dehusking methods, parboiling of rice advantages and disadvantages.
4. Millets -Varieties, composition and uses of maize, sorghum, barley, rye, oats, triticale, pearl millet and finger millet.
5. Introduction, common names and scientific names of different pulses. Chemical composition of pulses, processing of pulses- soaking, germination, decortications, cooking and fermentation. Toxic constituents in pulses and its Detoxification processes.

UNIT – II: FATS AND OILS (6 LECTURES)

1. Classification of lipids, types of fatty acids - saturated fatty acids, unsaturated fatty acids, essential fatty acids, trans fatty acids
2. Refining of oils, types- steam refining, alkali refining, bleaching, steam deodorization, hydrogenation**.**
3. Rancidity - hydrolytic and oxidative rancidity and its prevention.
4. Define - margarine, butter, hydrogenated vegetable oil, lard. **.**

UNIT – III: FRUITS AND VEGETABLES (8 LECTURES)

Classification of fruits and vegetables, general composition, enzymatic browning, names and sources of pigments, Dietary fibre)

Post harvest changes in fruits and vegetables – Climacteric rise, horticultural maturity, physiological maturity, physiological changes, physical changes, chemical changes, pathological changes during the storage of fruits and vegetables. (Ch-8, Srilakshmi)

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Compositional, Nutritional and Technological aspects of animal foods

UNIT – IV: FLESH FOODS - MEAT, FISH, POULTRY (12 LECTURES)

1. Meat - Definition of carcass, concept of red meat and white meat, composition of meat, marbling, post-mortem changes in meat- rigor mortis, tenderization of meat, ageing of meat.
2. Fish - Classification of fish (fresh water and marine), aquaculture, composition of fish, characteristics of fresh fish, spoilage of fish- microbiological, physiological, biochemical.
3. Poultry - Structure of hen's egg, composition and nutritive value, egg proteins, characteristics of fresh egg, deterioration of egg quality, difference between broiler and layers.

UNIT – V: MILK AND MILK PRODUCTS (8 lectures)

1. PFA definition of milk, typical chemical composition of milk of different species i.e. buffalo, cow, goat. Composition of milk, its constituents, various steps in processing of milk. An overview of types of market milk and milk productscheese, paneer, ice cream, ghee, butter, butter oil, flavoured milk, imitation milk.

RECOMMENDED READINGS :

1. Manay, S. & Shadaksharaswami, M., Foods: Facts and Principles, New Age Publishers, 2004
2. B. Srilakshmi, Food science, New Age Publishers,2002
3. Meyer, Food Chemistry, New Age,2004
4. Kenneth F. etal, edited-Vol-1, 2, The Cambridge World History of Food,Cambridge Univ.Press, 2000.
5. Martin Eastwood, Second edition, Principles of Human Nutrition,Blackwell publishng, 2003
6. Potter, Norman. M., Food Science, CBS Publication, 1996
7. Manay, S. & Shadaksharaswami, M., Foods: Facts and Principles, New Age Publishers, 2004
8. De Sukumar. , Outlines of Dairy Technology, Oxford University Press, 2007
9. Frazier William C and Westhoff, Dennis C. Food Microbiology, TMH, New Delhi, 2004

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ST. JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

VI SEMESTER **BIOCHEMISTRY** TIME: 2 Hrs/Week

BCH A1 6851 (2) **INTRODUCTION TO FOOD TECHNOLOGY** Max.Marks:50

w.e.f. 2015-2018('15AC' batch) **PRACTICAL SYLLABUS – IV A1**

1. Methods of sampling.

2. Identification of different non-perishable commodities-cereals, millets and their by-products.

3. Quality evaluation/inspection of different foods.
   - i. Spices and Condiments
   - ii. Pulses
   - iii. Nuts and oilseeds
   - iv. Tea and coffee

4. Identification of pigments and concept of post harvest changes in fruits and vegetables-climacteric, non climacteric and senescence

5. Estimation of pH of different foods

6. Adulteration tests for different foods:
   - i. Milk and milk products
   - ii. Tea and coffee etc

7. To give the concept of shelf life of different foods.(processed and unprocessed)

8. To perform pasteurization and sterilization of foods.

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