ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

I SEMESTER **HOMESCIENCE** TIME: 4HRS/WEEK

HS1202 (3) **INTRODUCTION TO FOOD SCIENCE** MAX.MARKS:100

w.e.f. 2020 –2021(“20AH”) **SYLLABUS**

**OUTCOMES OF THE COURSE:**

At the end of this course, the students will be able to

**A) REMEMBER AND EXPLAIN IN A SYSTEMATIC WAY OF :**

● About different plant and animal foods, their selection, nutritive values, composition, and storage and processing.

● Explains the principles of food preservation and causes of spoilage.

**B) UNDERSTANDING AND USES :**

● Planning recipes of cereals and millets, pulses, Milk and Milk products, vegetables, fruits, nuts and oil seeds products

● Uses different foods in cookery.

● Understands application of different processing techniques in cookery.

**C) CRITICALLY EXPLAIN, JUDGE AND SOLVE :**

● Standardisation of weights and measures of various food items.

● Analyses different processing techniques to improve nutritive quality of foods by germination, fermentation, supplementation, fortification etc.

**D) CREATIVITY :**

● Planning and preparation of nutritious recipes by using different foods

**E) PRACTICAL SKILLS :**

● Preparation of food without losing nutritive value

● Planning, preparing and calculating nutritive values of protein rich, Calcium rich, and Iron rich recipes.

**THEORY :**

**UNIT- I: INTRODUCTION TO FOOD SCIENCE:**

• Foods – Definition and objectives in the study of foods-functions of foods, group classification and relation to nutrition

• Cooking – Objectives of cooking, Preliminary preparations and methods of cooking – Advantages and disadvantages of each method.

• Effect of cooking on different nutrients.

**UNIT- II: PLANT FOODS:**

• Cereals and Millets – Structure, Composition and nutritive value, processing, selection, storage and use in cookery

• Pulses and Legumes – Composition and nutritive value, processing, selection, storage and use in cookery

• Vegetables and Fruits – Classification, Selection, Nutritional aspects, Pigments,

Enzymatic and non-enzymatic browning.

• Nuts and oil seeds – Nutritive value , use in cookery

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**UNIT- III: ANIMAL FOODS:**

• Milk and milk Products - nutritive value, use in cookery

• Egg - structure, nutritive value, methods to assess quality of eggs, changes during storage and use in cookery • Meat, Poultry, Fish – Nutritive value, use in cookery.

• Spices and condiments – Nutritive value, use in cookery

**UNIT- IV: FOOD PROCESSING:**

• Food Preservation – Methods, principles and their applications - high temperature, low temperature, removal of moisture, irradiation and preservatives.

• Food additives – Types and their role in food processing

• Nutrient Enrichment – Germination, fermentation, fortification etc.

• Multipurpose foods, Convenience and Ready to eat foods –Advantages and

disadvantages

**UNIT – V: FOOD MICROBIOLOGY:**

• Food Spoilage – Microorganisms causing spoilage – Factors responsible for spoilage and changes brought about in food by microorganisms.

• Microorganisms that bring about useful changes in food.

• Microbiology of different foods – Contamination and spoilage of milk, egg, meat, fish, vegetables and fruits

• Food Sanitation and Hygiene – Safe food practices during preparation, storage and serving of food.

**REFERENCESBOOKS :**

1. Bamji MS, Krishnaswamy K, Brahmam GNV. (2016). Textbook of Human Nutrition, 4th edition, Oxford and IBH Publishing Co. Pvt. Ltd.

2. Manay N. Shakuntala&ShadaksharaSwamy.(2008). Foods, Facts and Principles, 3rd edition, New Age International Publishers. .

3. Reddy,S.M.(2015). Basic Food Science & Technology, 1st edition, New Age

InternationalPublishers.

4. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra, S. (2010). Basic Food Preparation: A Complete Manual, Fourth Edition, Orient Black Swan Ltd.

5. Sumati R. Mudambi, M.V. Rajagopal. (2006). Food Science, 2nd edition, New

AgeInternational Publishers.

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ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM

I SEMESTER **HOMESCIENCE** TIME: 2HRS/WEEK

HS1252 (2) **INTRODUCTION TO FOOD SCIENCE** MAX.MARKS:50

w.e.f. 2020 –2021(“20AH”) **PRACTICAL SYLLABUS**

**OBJECTIVES:** To enable the students to develop skills to prepare recipes. acceptable with reference to appearance, palatability and nutritive value.

**UNIT – I:EXPERIMENTS ON :**

a. **CEREALS :**Microscopic examination of starch, extraction of gluten from wheat flour and maida, gelatinization and comparison of methods of cooking rice. Study of fermentation in Indian foods.

b. **PULSES :**Effect of sprouting, methods of cooking legumes and pulses – comparison.

c. **FRUITS AND VEGETABLES :**Effect of pH and heat on vegetable and fruit pigments, prevention of browning, test for pectin, effect of cooking on cellulose. Factors to be considered while cooking vegetables.

d. **EGGS :**Differences between fresh and stale eggs, yolk and albumin index. Coagulation temperature of different parts of egg, and qualitative tests for solubility of proteins. Factors affecting custard and omelets preparation.

e. **MEAT:** Microscopic structure of meat .

f. **MILK :**Tests for protein , carbohydrates, lipids and protein in milk, observation of physical characteristics of milk and curd, effect of PH and heat on milk . Testing the quality of milk with a lactometer.

**UNIT – II:** Sugar and jaggery – Stages of cookery.

**UNIT – III:** Training on Food preservation during holidays.

**REFERENCES BOOKS:**

1. Bamji MS, Krishnaswamy K, Brahmam GNV. (2016). Textbook of Human Nutrition, 4th edition, Oxford and IBH Publishing Co. Pvt. Ltd.

2. Manay N. Shakuntala & Shadakshara Swamy.(2008). Foods, Facts and Principles, 3rd edition, New Age International Publishers. .

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5. Sumati R. Mudambi, M.V. Rajagopal. (2006). Food Science, 2nd edition, New

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