Subject Code : CCN2U5

SEMESTER-II - CORE COURSE - V : ADVANCED FOOD SCIENCE
(Hour of instruction per week : 6 Theory 3+ Practical 3)

OBJECTIVES:

To enable students

1. Understand the principles and chemistry of foods.
2. Apply the principles while preparing and cooking.

S.No.	TOPIC	COURSE OUTLINE	RELATED EXPERIENCE (PRACTICALS)
UNIT I			
	Evaluation of quality of foods:		
	Sensory methods of assessment	Factors affecting the ability of food selection of taste panel .Different Preference and description test	Evaluating the acceptability of food. Subjective and objective methods.
	Physical and Objective methods	Physical characteristics like colour appearance. Texture, density, volume Tenderness. Viscosity and Surface tension, moisture Loss and weight. Microscopic examination	Microscopic examination
	Changes in food During cooking	Preparation of colloids gel formation. Stabilization of colloids. Colloidal chemistry	
	Emulsion	Food emulsion, emulsifier, Stabilizer, preparation of mayonnaise	Preparation of mayonnaise and emulsions

Browning Reaction	Enzymatic, nonenzymatic reaction in foods	

S.No.	TOPIC	COURSE OUTLINE	RELATED EXPERIENCE
	UNIT-II		
	Sugar	Sources, uses, properties, Crystallisation of sugar. Stages of sugar cookery	Crystallisation of Sugar stages of sugar cookery
	Sugar cookery	Amorphous and crystalline Candies, fondant, fudge And caramels, Indian Sweet preparations.	Fondant fudge, and brittle, preparation of halwa, coconut burfi and Gulabjamun
	UNIT III		
	CARBOHYDRATE:		
	Starch	Sources – uses, gelatinisation of flours starch as thickening Agents. Gluten formation Factors affecting it, Retro-Gradation of starch.	Microscopic examination of different starch gluten formation
	Bread making	Role of ingredients - Methods of Bread Making leavening Agents.	preparation of dosai, iddli, appam, poori, Chappathi, Demonstration of Bread making Preparation of Different biscuits.
	Fats and Oils	Sources and extraction of edible fats and oils. Characteristics of fats And oils. Physical and	Smoking temp. Factors affecting absorption of fats, deep fried

	Chemical properties of Oils and fats. Changes During storage and cooking. Uses of fats, value and Flakiness.	foods
Vegetables And Fruits	Structure, texture, pigments and acids in vegetable and Fruits. Cellulose and Hemicellulose. Browning Reactions-enzymatic and Non-enzymatic browning. Changes in cooking,pectic Substances, jams and jelly	Structure, texture, pigments and acids in vegetables and fruits browning reaction. Changes in cooking, pectic substances, jams and jellies.

S.No.	TOPIC	COURSE OUTLINE	RELATED EXPERIENCE
UNIT IV			
	Grams, Dhals And nuts	Composition, methods of processing and cooking, Effects of processing such As soaking, decortication, Germination and fermentation	Methods of cooking pulses, effect of soaking with Alkalis salts and germination of grams.
	Meat	Structure, cuts of meat and constituents of meat, Postmortem changes, methods of increasing Tenderness and juiciness	Meat fish and poultry changes in cooking. Two recipes in each, Involving any two Methods.
	Fish	Kinds of fish, constituents selection and cooking	
	Eggs	Structure, composition and Selection, coagulation of egg Protein, egg cooked in Shell, poached, cake making procedures and different	coagulation of Egg boiled eggs, poached eggs omelette custard and cake

	types of cakes.	
Milk and Milk Products	composition and constituents of milk. Physical and chemical properties. Coagulation of Milk protein, creaming Butter and cheese making	cream of tomato soup preparation of cheese, curds and ice-cream.

UNIT V

Fortification and Enrichment	
Post harvest	Post harvest losses reasons for losses of foods, extent of losses methods for assessing losses. Preventive measures to minimize losses of food.

SUGGESTED BOOK REFERENCES

A. Books.

1. Potter N.M. ' Food Science' The AVI publishing Company inc., West Port,Connecticut, U.S.S. 1973.
2. Fox A. Cameron, A.G. 1970, 'Food Science and Chemical Approach',University of London, press Ltd., 1970.
3. Griswold, R.M. 'The Experimental study of Foods' Houghton Milflin, Company, Bpstpn New York, 1962.
4. Peckham, G.C., 'Foundation of Food Preparation', The Macmillan and Company, London, 1969
5. Paul P.C. and Palmer, H.H..'Food Theory and applications'. John Willey and sons, Inc., New York 1972.
6. Low, B. 'Experimental Cookery' John Willey and Sons, Inc.,New York. (1965)
7. Meyer, :H. 'Food Chemistry' Van Nonstrand, Teinhold Company, NewYork and London, 1969.
8. Amerine, M.A. et-al ., 'Principles of Sensory Evaluation of food ' Academic press, New York, and London 1965.
9. Paul, P.C. and palmer, H.H Food Theory and Applicaions. John Wiley (1972)
10. Matz., S.A. Food Texture The AVI Publishing Co. (1962)
11. Kranar, A. and Twing B.A. Fundamental of Quality control for the Food Industry. The AVI publishing Co., (1966)
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13. Pameranz., Y., Functional Properties of Food components. Academic Press Inc., Boston, 1991.

JOURNALS

1. Food processing, patman publishing Company, New York, USA
2. Cereal food, world, American Association of Cereal Chemists.
3. British Food Journal, The Peterson Publishing Co., Ltd.
4. Food Technology 'Journal of Institute of Food Technology, Illinois, USA
5. Journal of Food Science and Technology by Association of Food Scientist and Technologist India.
6. Food Technology abstracts. CFRI. Mysore.
7. Journal of Food Science, The Institute of food technologist,Illinois, U.S.A.
8. Nutrition and Food science, Forbes publishing Ltd., Martree House, Queenway London