EXTENDED LECTURE OUTLINE

FND6 121 Bakery Science and Technology (2+1)

Theory

1. Introduction to baking science: Definition, Terminologies used in Baking Science, History of Baking Science, Objectives of Baking, Principles of Baking

2. Basic materials used in bakery and confectionery, selection, properties and functions of Water, milk, Leavening agents, Flavourings, Spices

3. Flours- constituents, functions and characteristics of good flour and tests. Wheat, Types of Wheat and Wheat milling process, Composition of flour, Types of flour, Flour enzymes, characteristics and PH value, Flour tests, Different types of flour mixtures used bakery,

4. Egg structure, composition and its functions in bakery. Egg Structure, Moisture Content of Eggs, Importance of Moisture in Baking, Impact of Egg Moisture on Texture, Role of Egg White and Egg Yolk in Contributing Moisture, Binding Properties of Eggs, Emulsification Role of Eggs, Leavening Action of Eggs, Proteins and Fats in Eggs, Practical Applications in Baking Recipes, Examples of Recipes That Showcase the Science of Eggs, Tips for Using Eggs Effectively in Various Baking Situations, Exploring Vegan Alternatives and Their Scientific Implications

5. Different types of fats and oils used in bakery and their functions : Factors to look in for shortenings, Types of fats and oils, Functional properties : Flour, FATS: Addition

of butter to the dough, Addition of margarine to the dough, Addition of vegetable shortenings to the dough, Addition of tallow fat to the dough, Addition of Lard fat to the dough. OILS : Addition of Sunflower oil to the dough, Addition of Coconut oil to the dough, Addition of olive oil to the dough, Addition of Palm oil to the dough

6. Sugars and functions and types of sugars used in bakery and confectionery: Definition, Importance, properties, and functions in Bakery and Confectionery products.

7. Salt and its functions in bakery products

8. Yeast and types of yeast used in bakery and their functions Definition, History, Size and Shape and methods of multiplication, Production , Enzymes, functions in dough making, properties and Storage, Quantity of yeast to be used Yeast Fermentation, Factors affecting fermentation, Variety or Types of Yeast and it's composition, Characteristics of Good Fresh Yeast
9. Improvers: Bread improvers, Functions of improvers, Types of bread improvers and its role in bakery products.

10. Yeast foods: Malt, Types of malt: Diastatic malt and Non Diastatic malt
11. Enriching Agents: Fats, Milk and Milk Products, Eggs

12. Anti-staling ingredients and it's functions.: Staling of bread, Causes of staling, Means of retarding staleness, Anti-staling ingredients : Emulsifiers, Enzymes, Mold and Mold Inhibitors.
13. Tools, equipment and techniques used in bakery

REFERENCES

1. S.C. Dubey, 2007, Basic baking, 5th edition, Chanakya mudrak, NewDelhi

2. Bakers handbook on Practical Baking, 1994, US wheat Associates, New Delhi

3. BHM-704DT.pdf

4. Unlocking the Science of Eggs in Baking: Understanding Structure, Moisture, and Binding for Perfect Results

5. UNIT10 BASIC COMMODITIES-FATS AND OIL SIN BAKERY.pdf

6. Raghavendra SN , Alvita Patricia, Hampana NN, Mahalakshmi D, 2022, Effect of Fats and Oilson Different Properties of Flours Used in Bakery Products: A Review, J Nutr Food Sci, Vol. 12 Iss. 1 No: 1000p353