

Jamia Hamdard
School of Open and Distance Learning

DETAIL SYLLABUS OF POST GRADUATE DIPLOMA IN BAKERY AND CONFECTIONERY TECHNOLOGY

PGDBCT-101 Fundamentals of Food Technology

UNIT-I

Introduction - Evolution of Food Processing from prehistoric times till date, Introduction to various branches of Food Science and Technology

UNIT –II

Introduction to various food processing and preservation technologies

Freezing- Introduction to refrigeration and freezing, definition, principle of freezing, freezing curve, changes occurring during freezing, types of freezing i.e. slow freezing, quick freezing, introduction to thawing, changes during thawing and its effect on food.

UNIT III

Drying and Dehydration- Definition, drying as a means of preservation, differences between sun drying and dehydration (i.e. mechanical drying), factors affecting rate of drying, normal drying curve, types of driers used in the food industry.

UNIT IV

Food processing and preservation technologies - Food Irradiation- Introduction, ionizing radiations used in food irradiation, uses of radiation processing in food industry, concept of cold sterilization.

Thermal Processing- Concept of pasteurization, sterilization, commercial sterilization, blanching, and canning.

PGDBCT-102 - Introduction to Bakery and Confectionery Technology

UNIT-I

Bakery industry status in India and World. Raw materials and quality parameters of the ingredients.

UNIT II

Dough chemistry and development; methods of dough mixing; Functions of Gluten, dough chemistry; Falling number, estimation of gluten quantity, SDS-sedimentation volume.

UNIT III

Role and functions of water, starch, protein, fat, ash in bakery products processing. Role of milk and milk products, malt, yeast, oxidizing agents and other preservatives. Spoilage of bakery products. Rancidity.

UNIT IV

Rheological testing of dough-Farinograph, Mixograph, Extensograph, Amylograph/Rapid ViscoAnalyzer, Alveograph.Effects of protein, starch, ash, water, enzymes, sugar, emulsifiers, temperature, mixing time on dough rheology.

PGDBCT-103 Wheat Quality and Milling

UNIT-I

Production and classification of wheat, Wheat grain structure, composition of wheat: Proteins, Starch, Fat, amylase activity, lipase.

UNIT- II

Wheat Milling; aims of milling, Quality aspects of flour; types of flour, Atta and Maida, Wheat proteins and their function; Rheology of flour, milling machineries.

UNIT III

Functionality of wheat proteins, gluten role in dough, enzymes in wheat and significance, functions of fat, ash, moisture and starch. Damaged starch.

UNIT IV

FSSAI specification for whole wheat flour, refined wheat flour, fortified flour, semolina, limits for additives, pesticides, metal contaminants, uric acid.

PGDBCT-104 Bakery & Confectionery Products Technology

UNIT-I

Technology for the manufacture of bakery products-bread, biscuits, crackers, cakes and the effect of variations in formulation.Effect of process parameters on the quality of the finished products; quality consideration and parameters; Staling and losses in baking; machineries used in bakery industry.

Types of biscuits, cakes, cookies, multi grain bakery products, gluten free products. Methods of dough preparation for different products (Sponge dough method, straight dough method, chemical dough development, microwave process; Creaming etc).

UNIT II

Quality characteristics of confectionery ingredients; technology for manufacture of chocolate, and special confectionary products; colour, flavour and texture of confectionary; standards and regulations; machineries used in confectionery industry.

UNIT III

General technical aspects of Industrial sugar confectionery, composition effects, changes, change of state; Boiled sweets, Caramel, toffee and fudge – Processing, Processing of liquorice paste, cream paste and aerated confectionery products.

PGDBCT-105 Food Plant Layout and Design

UNIT-I

Basic concepts of plant layout and design with special reference to bakery industries. Application of HACCP concept, Influence of location on plant layout, location factors, location theory and models, Economic plant size, types of manufacturing processes like continuous, repetitive and intermittent processes. GHP, GMP, Grain storage and Silos.

UNIT II

Preparation of a Plant Layout, Plant Layout problem, importance, objectives, classical types of layouts. Evaluation of layout. Advantages of good layout. Considerations in building design, type of factory buildings, choice of building construction, material for floors, foundation, walls, doors, windows, drains etc, ventilation, fly control, mould prevention and illumination in food processing industries.

UNIT III

Fixed cost, variable cost, depreciation, method of economic analysis, profitability analysis of a plant. Breakeven analysis.
