GURU KASHI UNIVERSITY

Diploma in Bakery and Confectionary

Session: 2025-26

Department of Hotel Management

Faculty of Management & Commerce

Diploma Attributes of the Programme: -

Type of learning outcomes	**The Learning Outcomes Descriptors**
Diploma Holder should be able to demonstrate the acquisition of:	
Learning outcomes that are specific to disciplinary/interdisciplinary areas of learning	Applying Baking techniques, Food preservation methods, and Hygiene protocols (e.g., HACCP, proper sanitation) to produce safe, high-quality baked goods and preserved foods while ensuring compliance with food safety regulations.
	Synthesizing Food science, Nutrition, and Food Costing principles to develop nutritious, profitable menus that meet dietary needs and optimize ingredient use through accurate cost calculations (e.g., AP/EP yields).
	Implementing Store management practices (e.g., FIFO inventory, stock rotation) and First aid skills to maintain efficient, safe food service operations, minimizing waste and responding effectively to workplace emergencies.
Generic learning outcomes	Analyzing complex challenges, such as ingredient shortages or safety hazards, and devise creative, evidence-based solutions using interdisciplinary knowledge from food science, hygiene, and management.
	Collaborate effectively in kitchen teams and communicate food safety, nutritional, and operational information clearly to colleagues and customers.
	Adaption to dynamic Food service environments, adhering to ethical standards and regulatory requirements while managing time and tasks efficiently under pressure.

Programme Learning outcomes:

Element of the Descriptor	**Programme learning outcomes relating to the Diploma**
The graduates should be able to demonstrate the acquisition of:	
Knowledge and Understanding	Fundamental knowledge of Bakery operations in Hospitality settings.
	Understanding of Nutrition, Food science, and environmental practices relevant to hospitality and guest well-being.
	Basics of Grooming skills for professional interactions.
	Familiarity with Store management needed for hospitality operations.
General, technical and professional skills required to perform and accomplish tasks	Practical skills in Bakery operations through hands-on training.
	Effective use of Food preservation techniques for operational efficiency.
	Development of personality, grooming, and communication skills for guest-facing roles.
Application of knowledge and skills	The ability to apply foundational hospitality knowledge and soft skills to perform tasks in real or simulated hotel environments.
Generic learning Outcomes	Basic problem-solving, teamwork, and interpersonal skills required to function in hospitality service environments.
Constitutional, humanistic, ethical, and moral values	An understanding of human values, environmental responsibility, and professional ethics in the context of hospitality.
Employability and job-ready skills, and entrepreneurship skills and capabilities/qualities and mindset	The essential job-ready skills and work attitude required for entry-level roles in hospitality operations, with an emerging understanding of entrepreneurial thinking.
Credit requirements	Completion of required credits as per the National Higher Education Qualifications Framework (NHEQF) Level 4.0, covering core subjects and practical training. Total Credits required are 40.
Entry requirements	Completion of High School (10^{th}) or higher with minimum 45% with English as a compulsory subject.

Program Structure

SEMESTER – 1st									
Course Code	**Course Title**	**Type of Courses**	**L**	**T**	**P**	**No. of Credits**	**Int.**	**Ext.**	**Total Marks**
DBC101	Basics of Bakery & Confectionary	Major	4	0	0	4	30	70	100
DBC102	Store Management	Major	4	0	0	4	30	70	100
DBC103	Food Science and Nutrition	Minor	3	0	0	3	30	70	100
DBC104	Hygiene and Sanitation	Minor	3	0	0	3	30	70	100
DBC105	Bakery (Practical)	SEC	0	0	8	4	30	70	100
DBC106	Basics of First AID	SEC	2	0	0	2	30	70	100
Total			**16**	**0**	**08**	**20**	**180**	**210**	**600**

SEMESTER – 2nd									
Course Code	**Course Title**	**Type of Courses**	**L**	**T**	**P**	**No. of Credits**	**Int.**	**Ext.**	**Total Marks**
DBC201	Advance Bakery & Confectionary	Major	4	0	0	4	30	70	100
DBC202	Food Costing	Major	4	0	0	4	30	70	100
DBC203	Commodities	Major	3	0	0	3	30	70	100
DBC204	Principles of Food Preservation	Minor	3	0	0	3	30	70	100
DBC205	Confectionary (Practical)	SEC	0	0	8	4	30	70	100
DBC206	Food Safety and Quality	MDSC	2	0	0	2	30	70	100
Total			**16**	**0**	**08**	**20**	**180**	**210**	**600**
Sub Total			**32**	**0**	**16**	**40**			

After completion of 2nd Semester, the student will undergo an On-the-Job Training in hotel in the Bakery and Confectionary Department for a duration of 6 months and submit the certificate of completion in the University.

Semester – I

Course Title: Basics of Bakery & Confectionary	L	T	P	Cr.
Course Code: DBC101	4	0	0	4

Total Hours: 60

LearningOutcomes: After completion of this course, the learner will be able to:

1. Identify and explain the basic terms, ingredients, and functions used in bakery and flour analysis.
2. Demonstrate the preparation of various doughs and the application of fermentation and proofing techniques.
3. Analyze the role of ingredients and fermentation effects on the quality of bakery products.
4. Create a variety of bakery and confectionery products, showcasing standard preparation and decoration techniques.

Course Content

Unit-I **16Hours**

Basics of Bakery

Introduction to bakery, Scope of Bakery & Confectionery, Bakery terms, Organization chart of Bakery, Different types of flours available,Constituents of flours, pH Value of flour, Water absorption power of flour, Gluten, diastatic capacity of flour.

Unit-II16Hours

Raw Materials

Basic raw materials of bakery, Role of flour, water, yeast, salt, Sugar, milk and fats, Introduction to baker's yeast, Fermentation in bakery and confectionary products, Over-done and under-done fermentation, Effect of over-done and under-done fermentation, Proofing in bakery, Under-proofing and its effects.

Unit-III **15Hours**

Bakery Products and Techniques

Types of doughs: Fermented, short, puff, choux, Bread-making process (Straight & Sponge method), Types of bread: White, whole wheat, multigrain, buns, rolls, Cookies: Techniques and types, Use of molds and tins, Storage and shelf-life of bakery products

Unit-IV **13Hours**

Confectionery Basics

Introduction to confectionery, Basic creams and fillings: Buttercream, whipped cream, custards, Cakes and sponges: Types and preparation methods, Icings and frostings: Fondant, royal icing, glaze, Faults and remedies in cakes and sponges, Handling and storage of confectionery products

Transactional Mode:

Video Based Teaching, Panel Discussion, Case Based Teaching, Brain Storming, Demonstration, Peer Teaching.

SuggestedReading:

- *Arora, K. (2012). Theory of bakery and confectionery. Frank Bros. & Co.*
- *Gisslen, W. (2016). Professional baking (7th ed.). John Wiley & Sons.*
- *Raina, U., Yadav, S., & Anand, S. (2010). Basic food preparation: A complete manual. Orient BlackSwan.*
- *Dubey, S. C. (2012). Basic baking. The Society of Indian Bakers.*

Course Title: Store Management	L	T	P	Cr.
Course Code: DBC102	4	0	0	4

Total Hours: 60

Learning Outcomes: After completion of this course, the learner will be able to:

1. Explain the fundamental concepts and significance of store management in the hospitality industry.
2. Apply inventory control techniques to maintain optimal stock levels and minimize losses.
3. Demonstrate effective procurement procedures and vendor management strategies.
4. Utilize technology and best practices to enhance store operations and ensure compliance with legal standards.

Course Content

UNIT-I16Hours

Introduction to Store Management

Definition, Concept and Importance of Store Management, Types of Stores: Centralized and decentralized, Dry stores, cold storage, and bonded stores, Store Layout and Design, Space utilization, Store Documentation: Requisition forms, Bin cards and stock registers.

UNIT-II

16Hours

Inventory and Stock Control

Introduction to inventory, Objectives and importance, Types of inventories: raw materials, work-in-progress, finished goods, Stock Control Techniques: ABC analysis, Economic Order Quantity (EOQ), Just-In-Time (JIT) inventory, Stock Taking and Verification, Loss Prevention, Waste management.

UNIT-III **15Hours**

Procurement and Vendor Management

Introduction to purchasing, Purchasing Procedures, Vendor Selection and Evaluation, maintaining supplier relationships, Receiving and Inspection, Storage and Issuing: FIFO and LIFO methods, Issuing procedures and documentation.

UNIT-IV **13Hours**

Store Operations and Technology

Store Operations, Technology in Store Management: Use of Point of Sale (POS) systems, Inventory management software, Legal and Ethical Aspects, Case Studies and Practical Applications.

Transactional Mode:

Video Based Teaching, Panel Discussion, Case Based Teaching, Brain Storming, Demonstration, Peer Teaching.

SuggestedReading:

- *Gopalakrishnan, P., & Sundaresan, M. (2009). Materials management: An integrated approach (2nd ed.). PHI Learning.*
- *Sharma, D. D. (2010). Purchasing and store management (3rd ed.). Himalaya Publishing House.*
- *Dobler, D. W., & Burt, D. N. (1996). Purchasing and supply management: Text and cases (6th ed.). McGraw-Hill Education.*
- *Arnold, J. R. T., Chapman, S. N., & Clive, L. M. (2011). Introduction to materials management (7th ed.). Pearson Education.*
- *Bowersox, D. J., Closs, D. J., & Cooper, M. B. (2010). Supply chain logistics management (3rd ed.). McGraw-Hill Education*

Course Title: Food Science and Nutrition	L	T	P	Cr.
Course Code: DFP103	3	0	0	3

Total Hours: 45

Learning Outcomes: After completion of this course, the learner will be able to:

1. Define food, nutrition, and the essential physiological, psychological, and social roles of food in human life.
2. Classify and differentiate macro- and micro-nutrients based on their functions, sources, and health implications
3. Evaluate the effects of nutrient deficiencies and excesses on human health.
4. Demonstrate awareness of nutrient preservation techniques during food storage, preparation, and cooking.

Course Content

UNIT-I12Hours

Basic Concepts of Nutrition

Definition of Food and Nutrition, Importance of Food - Physiological, - Psychological and – Social, Functions of food, Classification of nutrients, Macro-nutrients, Micro-nutrients.

UNIT-II
12Hours
Macro-Nutrients

Carbohydrates: Functions of Carbohydrates, Sources, Recommended Daily Allowances (RDA), Effects of Deficiency and excess intake of Carbohydrates, Fats: Functions of Fats, Sources Recommended Daily Allowances (RDA), Effects of Deficiency and excess intake of Fats, Proteins: Functions of Proteins, Sources, Recommended Daily Allowances (RDA), Effects of Deficiency and excess intake of Proteins, Water: Function, Source, Recommended Daily Allowance (RDA)

UNIT-III **11Hours**

Micro-Nutrients

Vitamins: Functions, sources, Recommended Daily Allowances (RDA) and Effects of Deficiency / Excess intake of; Vitamins of B-Complex Group, Vitamin C, Vitamin A, Vitamin D, Vitamin E, Vitamin K, Minerals: Functions, Sources, Recommended Daily

Allowances (RDA) and Effects of Deficiency / excess intake of;Calcium, Iron, Iodine, Sodium, Phosphorous

UNIT-IV **10Hours**

Conserving Nutrients and Balanced Diet

During Storing, During Food Preparation (Pre-cooking e.g. Washing, Peeling, Cutting, Chopping, Slicing, Pounding, Grinding, Soaking, Sprouting, Fermentation,Mixing), During Cooking, Definition and its importance, Factors Affecting Balanced Diet (Age, Gender and Physiological state)

Transactional Mode:

Video Based Teaching, Panel Discussion, Case Based Teaching, Brain Storming, Demonstration, Peer Teaching.

SuggestedReading:

- *Swaminathan, M. (2012). Handbook of food and nutrition (5th ed.). Bangalore Printing and Publishing Co.*
- *Srilakshmi, B. (2019). Dietetics (7th ed.). New Age International Publishers.*
- *Mudambi, S. R., & Rajagopal, M. V. (2007). Fundamentals of foods, nutrition and diet therapy (5th ed.). New Age International Publishers.*
- *Bamji, M. S., Krishnaswamy, K., & Brahmam, G. N. V. (2009). Textbook of human nutrition (3rd ed.). Oxford & IBH Publishing.*

Course Title: Hygiene and Sanitation	L	T	P	Cr.
Course Code: DBC104	3	0	0	3

Total Hours: 45

Learning Outcomes: After completion of this course, the learner will be able to:

1. Explain the types of microorganisms relevant to food microbiology and their roles in food contamination and spoilage.
2. Demonstrate safe food handling practices across all stages of food preparation and apply personal hygiene standards.
3. Interpret the principles of HACCP and describe the role and compliance standards of FSSAI in food safety regulation.
4. Classify types of waste and evaluate appropriate methods of garbage disposal in accordance with municipal laws and sanitation guidelines.

Course Content

Unit-I **12Hours**

Food Microbiology and Food Contamination and Spoilage

Introduction, Microorganism groups important in food microbiology - Viruses - Bacteria - Fungi (Yeast &Molds) - Algae – Parasites, Factors affecting the growth of microbes, Beneficial role of Microorganisms, Classification of Food, Contamination and Cross Contamination, Spoilages of Various Food with the Storing Method

Unit-II12Hours

Sanitary Food Handling and Safe Food Handler

Receiving, Storage, Preparation, Cooking, Holding, and Service of food, Food handler: Personal Hygiene discussing all the standard, Hand Washing Procedure, First Aid definition, types of cuts, wounds, lacerations with reasons and precautions.

Unit-III **11Hours**

Hazard Analysis Critical Control Point and FSSAI

Introduction to HACCP, History of HACCP, Principles of HACCP, HACCP plan development and implementation, Introduction to

FSSAI, Role of FSSAI, FSSAI Compliance, Integration of HACCP with FSSAI regulations.

Unit-IV **10Hours**

Garbage Disposal

Types of garbage, Types of bins, Methods of garbage disposal, Advantages and disadvantages, Municipal Laws and Swachh Abhiyan

Transactional Mode:

Video Based Teaching, Panel Discussion, Case Based Teaching, Brain Storming, Demonstration, Peer Teaching.

SuggestedReading:

- *Jay, J. M., Loessner, M. J., & Golden, D. A. (2005). Modern food microbiology (7th ed.). Springer Science+Business Media.*
- *Forsythe, S. J. (2020). The microbiology of safe food (3rd ed.). Wiley-Blackwell.*
- *Frazier, W. C., & Westhoff, D. C. (1995). Food microbiology (4th ed.). McGraw-Hill Education.*
- *Marriot, N. G., & Gravani, R. B. (2006). Principles of food sanitation (5th ed.). Springer.*
- *Motarjemi, Y., & Lelieveld, H. L. M. (Eds.). (2014). Food safety management: A practical guide for the food industry. Academic Press.*

Course Title: Bakery (Practical)	L	T	P	Cr.
Course Code: DBC105	0	0	8	4

Total Hours: 120

Learning Outcomes: After completion of this course, the learner will be able to:

1. Identify and correctly handle bakery equipment and ingredients used in professional bakery setups.
2. Apply standard mixing and fermentation methods to produce yeast-based bakery products.
3. Differentiate between various dough types and breads based on ingredients, fermentation, and baking techniques.
4. Produce a range of simple to rich and international yeast-leavened bakery products following industry standards.

Course Content

1. **Introduction to ingredients / Equipment:**
   - Identification and uses of equipment – large, small and utilities
   - Ingredients – Types of flour, Sugar, Nuts and Dry fruits, Shortenings, leavening etc.
2. **Quality Checking & Basic Mixing Methods:**
   - Flour: Window Pane Test, Gluten Content
   - Yeast: Flying fermentation
3. **Mixing Methods:**
   - Basic steps involved in mixing ingredients
   - Kneading, stirring, whipping, creaming etc.
4. **Simple yeast fermented products:**
   - Bread Sticks, Bread Rolls and Soft Rolls
5. **Flavored Breads:**
   - Basic Buns, Fruit Buns, Hot Cross Buns
   - Tomato Rolls and Garlic Rolls
6. **Rich Yeast Fermented Breads:**
   - Brioche
   - Fermented Doughnuts
   - Baba au Rhum
   - Savarin
7. **Bread Loafs:**
   - Milk Bread
   - Bread Loaf

- Currant Loaf
- Whole Meal Bread
- Masala Bread
- Raisin Bread

8. International Bread:

- French Bread
- Chelsea Buns

9. Laminated Yeast Breads:

- Danish pastry
- Croissants

10. Burger Buns, Pizza Base

Transactional Mode:

Demonstration, Role-Play, Workshops, Industrial visits,Stimulations, Video-Based teaching.

SuggestedReading:

- *Arora, K. (2012). Theory of bakery and confectionery. Frank Bros. & Co.*
- *Dubey, S. C. (2012). Basic baking. The Society of Indian Bakers.*
- *Gisslen, W. (2016). Professional baking (7th ed.). John Wiley & Sons.*
- *Raina, U., Yadav, S., & Anand, S. (2010). Basic food preparation: A complete manual. Orient BlackSwan*

Course Title: Basics of First AID	L	T	P	Cr.
Course Code: DBC106	3	0	0	3

Total Hours: 45

Learning Outcomes: After completion of this course, the learner will be able to:

1. Demonstrate knowledge of the fundamental principles and legal aspects of first aid in emergency situations.
2. Perform basic life support techniques including CPR and use of an AED on adults, children, and infants.
3. Apply appropriate first aid procedures for common injuries such as bleeding, burns, fractures, and choking.
4. Identify and manage medical emergencies and environmental conditions using correct first aid interventions.

Course Content

Unit-I **12Hours**

Introduction to First Aid and Basic Principles

Definition and importance of first aid, Objectives and principles of first aid, Responsibilities and qualities of a first aider, Legal and ethical aspects of first aid, Basic human anatomy and physiology relevant to first aid, First aid kit: contents and maintenance

Unit-II12Hours

Emergency Assessment and Basic Life Support

Scene assessment and safety, Primary survey (DRABC): Danger, Response, Airway, Breathing, Circulation, Secondary survey: Head-to-toe examination, Cardiopulmonary Resuscitation (CPR) techniques for adults, children, and infants, Use of Automated External Defibrillator (AED), Recovery position and safe patient handling

Unit-III **11Hours**

First Aid for Common Injuries and Conditions

Treatment of bleeding and wounds (types, control of bleeding, bandaging), Burns and scalds: types, degrees, and first aid management, Fractures, dislocations, and sprains: recognition and immobilization, Head injuries and spinal injuries: signs, symptoms, and precautions, Choking and airway obstruction,

Shock: types, symptoms, and first aid management

Unit-IV **10Hours**

First Aid for Medical Emergencies and Environmental Conditions

First aid for heart attack, stroke, seizures, diabetic emergencies, Poisoning: types, symptoms, and first aid measures, Heat exhaustion, heat stroke, hypothermia, and frostbite, Allergic reactions and anaphylaxis: recognition and treatment, Bites and stings (animal, insect), Role of emergency services and preparing for transfer

Transactional Mode:

Video Based Teaching, Panel Discussion, Case Based Teaching, Brain Storming, Demonstration, Peer Teaching.

SuggestedReading:

- *American Red Cross. (2017). First aid/CPR/AED participant's manual (7th ed.). American Red Cross.*
- *Eames, J., & Lambert, M. (2019). First aid manual: The step-by-step guide for everyone. Dorling Kindersley.*
- *Kitching, S. (2020). Essentials of first aid and emergency care (3rd ed.). Cengage Learning.*
- *Harris, J., & Winslow, K. (2018). Basic first aid and CPR techniques. McGraw-Hill Education.*

Semester – II

Course Title: Advance Bakery & Confectionary	L	T	P	Cr.
Course Code: DBC201	4	0	0	4

TotalHours:60

Learning Outcomes: After completion of this course, the learner will be able to:

1. Analyze the role of advanced ingredients and baking techniques in improving product quality and shelf life.
2. Demonstrate proficiency in preparing specialty breads, laminated doughs, and advanced pastries using industry-standard methods.
3. Apply advanced confectionery decoration techniques and chocolate tempering skills to create aesthetically appealing products.
4. Implement quality control measures, packaging solutions, and hygiene practices for safe and sustainable bakery operations.

CourseContent

UNIT-I16Hours

Basics of Confectionary

Flour, Sugar,shortening: Fats and oil, Egg, Moistening agent, Leavening Agents, Cake Making Methods: Sugar butter process,Flour butter process,Genoise method, Blending and rubbing method, Basic Pastries: Pastry making, principles & derivatives.

UNIT-II

16Hours

Oven and Bread

Knowledge and working of various types of ovens, baking temperatures for bread, confectionery goods, Methods of bread making: Straight dough method, Delayed salt method, No time dough method, Sponge and dough method, Characteristics of good bread: External characteristics, Volume, symmetry of shape, Internal characteristics - colour, texture, aroma, clarity and elasticity

UNIT-III14Hours

Confectionery and Cake Decoration

Tempering and molding of chocolates, Sugar work: Pulled, spun, and blown sugar, Caramel and fondant making techniques, Advanced cake decoration techniques: Buttercream, royal icing, fondant work, gum paste, and marzipan modeling, Use of airbrush and edible colors, Shelf-life and storage of confectionery

products.

UNIT-IV **09Hours**

Quality Control, Packaging, and Hygiene

Quality standards and sensory evaluation of bakery and confectionery products, Packaging materials and techniques for bakery items, Food safety and hygiene in bakery production, HACCP in bakery and confectionery units, Waste management and sustainability in bakery production.

TransactionalMode:

Team Teaching, Project Based Teaching, Brain Storming, Demonstration based analysis.

SuggestedReading:

- *Pyler, E. J., & Gorton, L. A. (2008). Baking science & technology (4th ed.). Sosland Publishing Company.*
- *Calvel, R., & Belleau, P. (2014). Technology of breadmaking (2nd ed.). Springer.*
- *Kinton, R., & Ceserani, V. (2009). The theory of catering (12th ed.). Hodder Education.*
- *Yamaguchi, M. (2008). Professional baking (6th ed.). Wiley.*

Course Title: Food Costing	L	T	P	Cr.
Course Code: DBC202	4	0	0	4

TotalHours:60

Learning Outcomes: After completion of this course, the learner will be able to:

1. Understand and apply the principles of pricing and costing in the context of food and beverage operations.
2. Analyze and implement various menu pricing strategies using appropriate costing techniques.
3. Track and manage material costs effectively across the stages of procurement, storage, production, and sales.
4. Demonstrate cost control techniques for food, labor, and overheads to ensure profitability in hospitality operations.

CourseContent

UNIT-I16Hours

Pricing and Costing

Introduction and definition of pricing and costing, Menu pricing styles, Types of menus, Different methods in pricing, Importance of food costing, Methods of costing, Costing techniques, Use of standardized recipes, Developing standardized recipes, Adjustment factor.

UNIT-II

16Hours

Material Costing

Through purchasing,Receiving,Issuing,Production, Sales and accounting, Purchasing standards, Procurement documentation, Sales fundamentals, Upselling techniques, Operational, fixed and overhead costs in different departments, Logistics cost.

UNIT-III **14Hours**

Costing Control

Food cost: Procurement, usage, storage and selling, Labor cost: Manpower control, Task rota, Duty Rota, Leaves,Overhead cost: Electricity, Green initiatives, Proper usage,Miscellaneous cost.

UNIT-IV **14Hours**

Yield Management and Costs

Introduction to yield, Types of yield in hotels, Butchers yield,cooking yield,Portion control, determining standard food cost, calculating portion

cost,calculating dinner cost, menu engineering for cost effectiveness.

TransactionalMode:
Team Teaching, Project Based Teaching, Brain Storming, Demonstration based analysis.

SuggestedReading:

- *Davis, B., Lockwood, A., Alcott, P., & Pantelidis, I. (2018). Food and beverage management (6th ed.). Routledge.*
- *Cousins, J., Foskett, D., & Pennington, A. (2016). Food and beverage management (5th ed.). Hodder Education.*
- *Dopson, L. R., & Hayes, D. K. (2015). Food and beverage cost control (6th ed.). Wiley.*
- *Singaravelavan, R. (2011). Food and beverage service. Oxford University Press.*
- *Kasavana, M. L., & Smith, D. I. (2011). Managing front office operations (9th ed.). AHLEI.*

Course Title: Commodities	L	T	P	Cr.
Course Code: DBC203	3	0	0	3

TotalHours:45

Learning Outcomes: After completion of this course, the learner will be able to:

1. Understand the composition, classification, and processing of essential ingredients like wheat, sugar, eggs, and dairy used in bakery and confectionery.
2. Identify various leavening, shortening, and gelling agents and explain their functional role in baked and confectionery products.
3. Evaluate the impact of ingredient quality, selection, and usage on final product characteristics.
4. Apply knowledge of food additives, preservatives, and garnishes in designing safe and appealing bakery products.

CourseContent

UNIT-I12Hours

Wheat and Sugar

Wheat: Uses, Composition, Production, Grade and Quality,Wheat products, other flours, Meals and starches, Sugar: Sugar substitutes, Syrups, Jams and marmalades, Cocoa production, Cocoa by-products.

UNIT-II

12Hours

Eggs,Dairy Products and Leavening Agents

Types of dairy products, Types of eggs, Importance in bakery and Confectionery, Grading, Quality and Selection of eggs and dairy products, Introduction to leavening agents, Yeast and its varieties, Role in raising bakery products, Chemical leavening agents.

UNIT-III **11Hours**

Shortenings and Gelling agents

Role of shortening, Types of shortening and crusts, Usage in bakery and confectionery, Role of gelling agents in bakery and confectionary, Food additives and preservatives, Edible garnishes, Canned food.

UNIT-IV **10 Hours**

Food Laws

Introduction to food laws, Storage and preservation of bakery and confectionery products, Organic and genetically modified foods, Canned foods and preservation, Storage conditions.

Transactional Mode:

Demonstration, Role-Play, Workshops, Industrial visits,Stimulations, Video-Based teaching.

SuggestedReading:

- *Dubey, S. C. (2007). Basic Baking. The Society of Indian Bakers.*
- *Gisslen, W. (2017). Professional Baking (7th ed.). John Wiley & Sons.*
- *Raina, U., & Chopra, S. (2010). Food Science. New Age International Publishers.*
- *Manay, S. N., & Shadaksharaswamy, M. (2014). Foods: Facts and Principles (3rd ed.). New Age International.*

Course Title: Principles of Food Preservation	L	T	P	Cr.
Course Code: DBC204	3	0	0	3

TotalHours:45

Learning Outcomes: After completion of this course, the learner will be able to:

1. Understand the fundamentals and significance of food preservation in maintaining food quality and safety.
2. Identify causes of food spoilage and match suitable preservation techniques to different types of food products.
3. Apply traditional and modern methods of preservation including thermal, chemical, and biological techniques.
4. Demonstrate knowledge of food packaging technologies and their role in enhancing shelf life and safety.

Course Content

UNIT-I12Hours

Introduction to Food Preservation

Definition and importance of food preservation, Objectives of food preservation, causes of food spoilage: microbial, enzymatic, chemical, physical, Factors affecting the rate of food spoilage, Principles of food preservation, Classification of food preservation techniques: traditional vs modern, Food safety and hygiene considerations

UNIT-II

12Hours

Methods of Preservation: Low and High Temperature

Low temperature preservation: Refrigeration and chilling, Freezing and deep freezing, Freezer burn and thawing, High temperature preservation: Pasteurization, Blanching, Canning and bottling, Sterilization, Use of retort pouches, Heat transfer methods and thermal death time

UNIT-III **11Hours**

Dehydration, Irradiation, and Chemical Preservation

Drying and dehydration: Methods: sun drying, tray drying, spray drying, freeze drying, Water activity and its significance, Food irradiation: Principles and methods, Applications and safety considerations, Chemical preservation: Use of salt, sugar, acids, and preservatives, Natural vs artificial preservatives, Regulations related to chemical usage (FSSAI norms)

UNIT-IV **10 Hours**

Fermentation, Packaging, and Modern Trends

Fermentation as a method of preservation: Types: lactic acid, alcoholic, acetic acid fermentation, Fermented food products and their benefits, Food packaging and preservation: Packaging materials and properties, Role of packaging in shelf-life extension, Modern and emerging technologies in food preservation: MAP (Modified Atmosphere Packaging), CAP (Controlled Atmosphere Packaging), HPP (High Pressure Processing), Use of biotechnology and nanotechnology in food preservation

Transactional Mode:

Team Teaching, Project Based Teaching, Brain Storming, Demonstration based analysis.

Suggested Reading:

- *Fellows, P. J. (2009). Food processing technology: Principles and practice (3rd ed.). Woodhead Publishing.*
- *Desrosier, N. W., & Desrosier, J. N. (1998). The technology of food preservation (4th ed.). CBS Publishers.*
- *Potter, N. N., & Hotchkiss, J. H. (1998). Food science (5th ed.). Springer.*
- *Manay, S. N., & Shadaksharaswamy, M. (2008). Foods: Facts and principles (2nd ed.). New Age International.*
- *Ramaswamy, H. S., & Marcotte, M. (2006). Food processing: Principles and applications. CRC Press.*

Course Title: Confectionary (Practical)	L	T	P	Cr.
Course Code: DBC205	0	0	8	4

Total Hours: 120

Learning Outcomes: After completion of this course, the learner will be able to:

1. Demonstrate competence in preparing a variety of advanced cakes, biscuits, pastries, and desserts using professional baking techniques.
2. Differentiate and apply appropriate methods for making various pastry derivatives and icings suitable for different bakery products.
3. Design and decorate celebration and specialty cakes with precision, creativity, and attention to customer expectations.
4. Prepare and present hot and cold desserts and ice creams with attention to texture, flavor, and presentation aesthetics.

Course Content

1. **Basic Cake Making:**
   - Plain Sponge
   - Madeira Cake, Rock Cake, Fruit Cake
   - Fatless Sponge
   - Swiss Rolls
   - Genoise Sponge
2. **Biscuits & Cookies:**
   - Plain biscuits
   - Piping biscuits
   - Cherry knobs
   - Langue –de – chats
   - Salted biscuits
   - Nut biscuits
   - Coconut biscuits
   - Macaroons
   - Tricolour
   - Chocolate biscuits
   - Short bread biscuits.
   - Ginger biscuits
   - Cheese biscuits
   - Cream fingers.
3. **Basic Pastry &Derivatives:**

- Short Crust Pastry
- Jam tart
- Lemon curd tart
- Apple pie
- Banana Flan
- Fruit Tartlets
- Choux Pastry
- Chocolate Éclairs
- Profit role
- Cream puff
- Puff Pastry & flaky pastry
- Khara Biscuits
- Veg patties
- Cheese Straws
- Bouchee
- Vol-au-vents,
- Mille Feuillet
- Jalousie
- Creams Horns
- Apple Strudel

4. Icings and Toppings

- Fondant
- American frosting
- Butter cream icing
- Royal icing
- Gum paste marzipan

5. Pastry & Special Cakes

- Queen cakes
- Chocolate dippings
- Cheese cake
- Baba-cum Rhum
- Savarin Chantilly
- Meringue chantilly
- Madeline cake
- Pineapple pastry
- Chocolate pastry

6. Icing Cakes

- Layered Cakes
- Celebration Cakes
- Birthday Cakes
- Wedding Cakes

7. Puddings and Desserts

- Hot dessert: Caramel Custard
- Bread and Butter pudding
- Cold Desserts: Bavarois; ginger pudding; cold lemon soufflé; chocolate mousse; charlottes royale; charlotte russe; charlotte arlequine; bavarois urbane; soufflé praline; fruit truffle.

8. Ice Cream

- Vanilla
- Strawberry
- Chocolate
- Mango
- Sorbets
- Bombe
- Sundaes

Transactional Mode:

Demonstration, Role-Play, Workshops, Industrial visits,Stimulations, Video-Based teaching.

SuggestedReading:

- *Gisslen, W. (2016). Professional baking (7th ed.). Wiley.*
- *Labensky, S. R., Van Damme, A., & Martel, P. (2015). On baking: A textbook of baking and pastry fundamentals (3rd ed.). Pearson Education.*
- *Suas, M. (2008). Advanced bread and pastry: A professional approach. Delmar Cengage Learning.*
- *Kinton, R., & Ceserani, V. (2009). The theory of catering (12th ed.). Hodder Education.*
- *Rinsky, G., & Rinsky, L. (2009). The Pastry Chef's Companion: A comprehensive resource guide for the baking and pastry professional. Wiley.*

Course Title: Food Safety and Quality	L	T	P	Cr.
Course Code: DBC206	3	0	0	3

Total Hours: 45

Course Learning Outcomes: After completion of this course, the learner will be able to:

1. Understand the fundamental principles of food safety and identify potential hazards in the food production and distribution chain.
2. Explain national and international food safety standards and regulatory frameworks including FSSAI and Codex.
3. Demonstrate knowledge of food quality attributes and various evaluation techniques used in the food industry.
4. Apply the principles of HACCP, GMP, and GHP in food production environments to ensure product safety and compliance.

Course Content

UNIT-I12Hours

Introduction to Food Safety and Quality

Definition and Importance of Food Safety and Food Quality, Factors affecting food safety: Biological, Chemical, and Physical hazards, Types of food contamination and spoilage, Concept of food safety management, Foodborne illnesses and prevention, Good Hygienic Practices (GHP) and Good Manufacturing Practices (GMP)

UNIT-II

12Hours

Food Safety Standards and Regulations

Overview of Indian and International Food Safety Regulations, FSSAI – Role and Functions, Food Safety and Standards Act, 2006, Codex Alimentarius Commission – Objectives and Guidelines, HACCP – Principles and Implementation, ISO Standards (ISO 22000) in food safety, Packaging and labeling requirements

UNIT-III **11Hours**

Food Quality Management Systems

Definition and Dimensions of Food Quality, Quality Attributes: Sensory, Physical, Chemical, and Microbiological, Quality

Assurance vs. Quality Control, Total Quality Management (TQM), Quality Evaluation Techniques: Sensory Evaluation, Instrumental Analysis, Food Adulteration – Common types, detection techniques

UNIT-IV **10Hours**

Emerging Trends and Safety Practices

Risk Analysis: Assessment, Management, and Communication, Traceability and Recall Procedures, Allergen Management in Food Industry, Role of Technology in Food Safety (Smart packaging, Blockchain, AI), Sustainable and ethical food practices, Consumer awareness and food literacy, Case studies on food safety incidents

TransactionalMode:

Team Teaching, Project Based Teaching, Brain Storming, Demonstration based analysis.

SuggestedReading:

- *Schmidt, R. H., & Rodrick, G. E. (2005). Food safety handbook. John Wiley & Sons.*
- *Rai, V. R., & Bai, J. A. (2017). Food safety and protection: Preventing foodborne illness. CRC Press.*
- *Goyal, M. R., & Ray, R. C. (2016). Fundamentals of food quality assurance. Apple Academic Press.*
- *Motarjemi, Y. (Ed.). (2014). Food safety management: A practical guide for the food industry. Academic Press.*

On-the-Job Training

Course Content

1. Evaluation of Students for Professional Training

- A total training of 24 weeks in the Department of Bakery & Confectionary in Hotels, Restaurants, or QSR's.
- The student must maintain: -
    - Attendance/Punctuality
    - Proficiency in organizing departmental task
    - Initiative/responsibility
    - Interpersonal relations
    - Behavior/attitude

2. Submission Post Completion of Internship

- Training Completion Certificate
- Log-Book

Post the submission of Training Completion Certificate the student will be provided the Trade Diploma in Bakery & Confectionary.