MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
(Formerly West Bengal University of Technology)
Syllabus of B.Sc. in Culinary Science
(Effective from 2023-24 Academic Sessions)

SEM-6

Sl.	Subject Type	Code	Subject Name	Credit			Total Credit
				L	T	P	
1	DSC	BSCS601 & 691	Kitchen Facility Planning	3	0	2	5
2		BSCS602 & 692	Advanced Bakery and Confectionery	3	0	2	5
3		BSCS603 & 693	Basics of Cloud Kitchen and Operations	3	0	1	4
4	DEC	MIC601	Web Development with HTML and CSS	3	1	0	4
5		MIC602A/B	Internet and Networking /ERP	3	1	0	4
Total Credit							22

DSC 12: Kitchen Facility Planning (Theory)
Course Code: BSCS 601
Credits: 3
Contact Hours: 45 hours

Course Objective: primary objective of a kitchen facility management course is to equip students with the knowledge and skills to design, plan, and manage food service facilities efficiently and safely, focusing on aspects like layout, equipment selection, operational efficiency, sanitation, safety protocols, cost management, and staffing to create a productive and hygienic kitchen environment. The course has been also designed to provide an advanced knowledge and evaluate the complexity of food facility in an organization performing specialized function in the manufacture, Sales, and services of food.

COURSE OUTCOMES (CO):

Sl	Course Outcome	Mapped modules
1	Analyse about the concept and complexity of facility planning and service, and the flow of work to conclude the project.	M1, M2
2	Analyse and evaluate the salient points of kitchen designing and their logical implementations'.	M1 ,M2
3	Outline and illustrate the food service planning & design and space calculations.	M2, M3
4	Identify & Create the space for kitchen and store, Planning and Design.	M4, M5, M6
5	Evaluate & demonstrate energy management system and its objectives.	M1 ,M4, M5, M6
6	Application of Perishables and Non-Perishables; Hot and Cold Servings	M2, M4, M5 ,M6

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Module	Content	Total Hours	%age of questions	Blooms Level
M 1	Introduction to the Kitchen facility planning	7	10	3,4
M 2	Apply and assess the salient points and their logical implementations	8	25	4,5
M 3	Outline and illustrate the food service planning & design and space calculations	8	25	3,4,5
M 4	Identify & Create the space for kitchen and store, Planning and Design	8	15	4,5
M 5	Analyse & demonstrate energy management system and its objectives	7	15	4,5
M 6	Application of Perishables and Non-Perishables; Hot and Cold Servings	7	10	3,4
		45	**100**	

Module 1 – Introduction to the facility planning: Concept of facility planning, Distinguishing the facility & Service, facilities & services require for various type of commercial kitchen, Work Flow for efficiency and growth, creating a physical layout that supports operations, a logical workflow to ensure smooth production, safety, and efficiency. **(7 Hours)**

Module 2 – BUILDING AND EXTERIOR FACILITIES: Salient point of commercial kitchen design, Roof, exterior walls, windows and doors, structural frame, foundation elevators, water drainage systems, utilities, landscaping and grounds. To understand the basic concept of building layout in accordance to kitchen planning, operation & workflow. **(8 Hours)**

Module 3 – FOOD SERVICE PLANNING AND DESIGN: concept development, feasibility, regulations, planning layout, receiving areas, storage areas, kitchen, office space, sample blue print. Key design elements including a logical flow from receiving to storage and preparation, with specific work centers like prep and cooking areas, proper ventilation, and efficient use of space like galley or island layouts**. (8 Hours)**

Module 4 – KITCHEN AND STORES PLANNING AND DESIGN: development process, feasibility studies, space allocation programme, operational criteria, budget, preliminary schedule, site design, food and beverage outlets, function areas, recreational facilities, back of the house areas **(8 Hours)**

Module 5 – ENERGY MANAGEMENT: background, energy pricing, energy cost control and building systems, reducing food and beverage production and service energy costs, reducing boiler and chilling energy costs, energy management and conservation systems **(7 Hours)**

Module 6 - Perishables and Non-Perishables; Hot and Cold Servings, Field Survey, Procurement, Presentation, Preparation, Process Improvement, Production. The classifications of perishable and non-perishable food, their handling across all stages of food service and production, from procurement to serving, with key differences in required infrastructure, time management, and safety protocols. **(7 Hours)**

DSC 12: Kitchen Facility Planning (Practical)
Course Code: BSCS 6 9 1
Credits: 2
Contact Hours: 60 hours

Module 1 – KITCHEN AND STORES PLANNING AND DESIGN: Industry visit on development process, feasibility studies, space allocation programme, operational criteria, budget, preliminary schedule, site design, food and beverage outlets, function areas, recreational facilities, back of the house areas **(30 Hours)**

Module 2 - Perishables and Non-Perishables; Industry visit on Hot and Cold Servings, Field Survey, Procurement, Presentation, Preparation, Process Improvement, Production. The classifications of perishable and non-perishable food, their handling across all stages of food service and production, from procurement to serving, with key differences in required infrastructure, time management, and safety protocols. **(30 Hours)**

Suggested Readings:

1. Hospitality Facilities management and Design By: David M. Stipanuk, Harold Roffmann Published: Educational Institute, AHMA
2. How things work-The Universal Encyclopedia of Machines, Volume 1&2
3. The Management of Maintenance and Engineering Systems in the Hospitality Industry By: Frank D. Borsenik & Alan T, Stutts Published: John Willey & Sons Inc. NY
4. Air Conditioning Engineering By: W.P.JonesPublished: English Language Book Society/Edword Arnold

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DSC13: Advanced Bakery and Confectionery (Theory)
Course Code- BSCS 602
Credits: 3
Contact Hours: 45 hours

Course Objective: The course has been designed to provide a detailed knowledge and to assess the complexity of advanced bakery & confectionery, chocolatier and sugar craft manufacturing. The aim is to enable students to further develop their knowledge, skills and abilities in bakery and to make use of the necessary techniques. The primary objectives of an Advanced Bakery and Confectionery course are to impart advanced skills in preparing a wide range of baked goods, understand ingredient science, apply professional techniques, and learn essential business management and hygiene practices for a successful career in the industry.

Sl	Course Outcome	Mapped modules
1	Analyse about the concept of Confectionary, their Technology & Principals applied.	M1
2	Demonstration of custard, ice cream, pudding, mousse, soufflés, frozen dessert, fruit dessert and dessert presentation.	M1 ,M2
3	Demonstrate & apply different types of chocolates, effect of chocolate on health, techniques of working with chocolate, chocolate decoration.	M2, M3
4	Evaluate and analyse the Various types of sugar, isomalt used in sugar work, model of sugar work.	M4,
5	Create Bakeshop production like choux pastry, laminated pastry.	M5
6	Demonstrate, analyse & evaluate Celebration cake and different types icing.	M5, M6

Module Number	Content	Total Hours	%age of questions	Blooms Level
M 1	Analyse and illustrate about the concept of Confectionary, their Technology & Principals applied.	5	20	3,4
M 2	Demonstration of Custard, Pudding, Mousse, Soufflés, Frozen Dessert, Fruit Dessert and Dessert Presentation.	12	25	4,5
M 3	Apply & demonstrate different types of chocolates, Effect of chocolate on health, Techniques of working with chocolate, Chocolate decoration.	8	20	3,4
M 4	Apply, illustrate and Analgise the Various types of sugar, isomalt used in sugar work, model of Sugar work.	8	20	4,5,6
M5	Demonstrate & analyse Bakeshop production.	5	5	4,5
M6	Demonstrate & discuss Celebration cake and different types icing.	7	10	4,5

		45	**100**	

Module 1: Introduction to structure and physical properties of primary ingredients and their chemistry. Role of Ingredients in Bakery & Confectionary, Basic syrup, Sauce, Custard, Pudding, Mousse & Soufflés, Frozen Dessert & Dessert Presentation. **(5 Hours)**

Module 2: Equipment's selection criteria**,** used & cleaning. Technology & Principals applied in Bakery & Confectionary, Fundamental of bakery, knowledge about Industrial production and practice **(12 Hours)**

Module 3: Chocolateries: History, Manufacturing process from harvesting, fermenting cocoa beans, roasting, grinding, conching, and tempering them before molding and packaging of Chocolate. Types of Chocolate, Effect of chocolate on health, Techniques of working with chocolate, Chocolate decoration. **(8 Hours)**

Module 4: Sugar craft: Fundamentals, Tools for Sugar work, various types of sugar used in sugar work, boiling syrups for sugar works, Spun Sugar & Caramel Decorations, Poured Sugar, Pulled sugar and Blown sugar, Use of Isomalt. **(8 Hours)**

Module 5: Bakeshop production like choux pastry, laminated pastry., process improvement, faults in making rolled in dough. Role of Innovation, unique flavor profiles and variations, process improvements, maintaining consistent quality and efficiency. **(5 Hours)**

Module 6: Celebration cakes and different types icing such as buttercream**,** fondant**,** ganache, and cream cheese frosting, each offering different textures, flavors, and uses. **(7 Hours)**

Suggested Readings:

Professional Baking by Wayne Gisslen (Fourth Edition).

Professional Baking- American Culinary Institute.

A professional text to Bakery & Confectionary by John Kingslee.

Theory of bakery & patisserie by Bali Parvinder S.

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DSC13: Advanced Bakery and Confectionery (Practical)
Course Code- BSCS 692
Credits: 2
Contact Hours: 60 hours

Module 1 – Preparation of set dessert like mousse, panna cotta & crème brulee on careful technique to achieve their signature texture and flavor. Once mastered on their plating technique can be elevated with thoughtful garnishes and presentation. **(15 hours)**

Module 2 – Preparation methods for dough like lean dough, rich dough, sour dough & artisan bread involves varying ingredients and techniques, primarily concerning the addition of fats and enrichments and the type and length of fermentation. **(15 hours)**

Module 3 – Preparation of various classical breakfast roll / buffet spread in quantity production & their modern display style, use tiered platters, labeled stations, and a focus on fresh, colorful garnishes to create an appealing and organized presentation that allows guests to serve themselves easily. **(15 hours)**

Module 4 -Preparation of basic chocolates, Celebration cake and different types icing such as buttercream**,** fondant**,** ganache, and cream cheese frosting. **(15 hours)**

Suggested Readings:

Professional Baking by Wayne Gisslen (Fourth Edition).

Professional Baking- American Culinary Institute.

A professional text to Bakery & Confectionary by John Kingslee.

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DSC 14: Basics of Cloud Kitchen and Operations Course (Theory)
Code: BSCS 603
Credits: 3
Contact Hours: 45 hours

Course Objective: The course is designed to provide a thorough knowledge and skills of Cloud Kitchen operations, various planning and implementing techniques. It will also help the learners to make use of about entrepreneurship opportunities. The objective of a "Basics of Cloud Kitchen and Operations" course is to equip individuals with the foundational knowledge and skills to successfully start, manage, and grow a delivery-only food business by covering key areas like cuisine and menu development, kitchen design, technology, marketing, and legal compliance. The goal is to enable participants to understand and leverage the advantages of the cloud kitchen model, such as lower overhead costs, operational efficiency, and flexibility, to thrive in the food delivery market.

Sl.No	Course Outcome	Mapped modules
1	Analyse and evaluate The Vision and Mission of a Cloud Kitchen Brand	M1, M2
2	Evaluate and explain the Importance and Aspects of Budgeting	M1 ,M2
3	Illustrate on the Location and the basis of its selection	M2, M3
4	Articulate and apply the compliance that needs to be Followed	M4, M5, M6
5	Demonstrate the model of Menu Engineering along with the importance of Pricing	M1 ,M4, M5, M6
6	Application and association of Aggregators	M2, M4, M5 ,M6

Module Number	Content	Total Hours	%age of questions	Blooms Level
M 1	Vision and Mission of Brand	5	10	2,3,4
M 2	Importance and Aspects of Budgeting	5	10	2,3,4
M 3	Choosing of Strategic Location	10	25	3,4,5
M 4	Compliances	8	20	3,4
M 5	Costing and Menu Engineering	7	15	4,5,6
M 6	The importance of Pricing	5	10	4,5
M 7	Branding and Marketing	5	10	2,3
		45	**100**	

Module 1 – Vision and Mission of the Brand. Need of a Vision for a Cloud Kitchen, Importance of Mission for a Cloud Kitchen, The impact of Vison and Mission on Cloud Kitchen Success, How to Start a Business, Project selection and Market Survey. (5 Hours)

Module 2 – Budgeting: Budgeting and its importance before beginning the business, Aspects of Budgeting in a cloud kitchen **(5 Hours)**

Module 3 – Choosing of Strategic Location: Choosing of Location to keep the Budget in Place**,** Right Location to reduce Capital Investments, what to do which Location is Closed, Simultaneous work that need to be done, Choosing Contractor and Closing on the best deal. **(10 Hours)**

Module 4 – Compliances: Licenses Required, Food Safety, Personal Hygiene, FSSAI, Tackling Compliances Issues, Government Schemes and Concessions, Guideline for Project Report and Preparation for Loan. **(8 Hours)**

Module 5 – Costing and Menu Engineering: How to Calculate Costing, The Reverse Calculation for better Profits, choosing of a menu that minimizes wastages, Portioning Food. **(7 Hours)**

Module 6 – Importance of Pricing: What to include in Pricing, Importance of two different prices for customers, how to make profits with the help of Right Pricing. **(5 Hours)**

Module 7 Branding and Marketing- Branding and Marketing, how does Branding Help, choosing a POS, dealing with Aggregators, why aggregators are important for building the brand. Choosing the right Food delivery options. **(5 Hours)**

Suggested Readings:

- How to start a Cloud Kitchen Business: Decoding the Cloud Kitchen Business Module? By Sebi Tharoor.
- Cloud Kitchen: Restaurant at the speed of internet by Daniel Guedes
- Secrets of Cloud Kitchen by Manvir Singh Anand
- New Indian Take Away: Cookbook and guide to start a modern Indian take away business by Bobby Geetha
- Catering your way to Financial Independence. By Manvir Singh Anand
- Food Delivery Restaurant Success: How to start or manage your Business in Hospitality by Nikki Yakin.
- How to start, run and grow a quick service Fast Food Restaurant by Robert Winfield.

DSC 14: Basics of Cloud Kitchen and Operations (Practical)
Course Code: BSCS 693
Credit -1
Contact hours -30 hours

Module 1 – Cloud kitchen operation: site visit & project work on budgeting in a cloud kitchen, How to Calculate Costing, The Reverse Calculation for better Profits, choosing of a menu that minimizes wastages, Portioning Food**. (30 hours)**