

GANPAT UNIVERSITY				
FACULTY OF DIPLOMA ENGINEERING				
Programme	Diploma		Branch/Spec.	Agricultural Engineering
Semester	III		Version	1.0.0.0
Effective from Academic Year		2026-27	Effective for the Batch admitted in	July 2025
Course Code	1AE3104	Course Name	Fundamentals of Bakery	

I. TEACHING, LEARNING AND ASSESSMENT SCHEME

Course Type	Course Code	Course Title	Total IKS Hrs for Sem	Learning Scheme					Credits	Examination Scheme										Total
				Actual Contact Hrs/week			SLH	NLH		TH				PR				SLA		
				CL	TL	LL				FA-TH	SA-TH	TOTAL		FA-PR	SA-PR	TOTAL		Max	Min	
												Max	Min			Max	Min			
DSC	1AE3104	Fundamentals of Bakery	-	1	-	2	1	4	2	40	60	100	40	20	50	20	20	20	8	170

Abbreviations:	CL- Classroom Learning	TL- Tutorial Learning	LL- Laboratory Learning
	SLH- Self Learning Hour	NLH- National Learning Hour	SLA- Self Learning Assessment
	FA- Formative Assessment (Term work + Mid Exam + Attendance)		SA- Summative Assessment

II. PRE-REQUISITES

Need basic knowledge of food science and nutrition. Understanding of measurement units and basic calculations. Basic knowledge of hygiene and sanitation practices. Interest in food processing and bakery operations. make in paragraph form

III. INDUSTRY / EMPLOYER EXPECTED OUTCOMES

Ability to handle bakery equipment safely and efficiently. Knowledge of standard baking procedures and product quality control. Understanding of food safety standards and hygiene practices. Skill in preparing commercial bakery products. Basic entrepreneurial skills for small-scale bakery business.

IV. COURSE LEARNING OUTCOMES

- CO1:** Understand fundamentals of baking, ingredients, equipment, and standard bakery processes.
CO2: Apply food safety, hygiene, and Good Manufacturing Practices (GMP) in bakery operations.
CO3: Prepare a variety of bakery products such as cookies, cakes, muffins, cupcakes, and puff pastries using standard methods.
CO4: Identify and troubleshoot common bakery production defects and apply corrective measures.
CO5: Apply basic packaging, storage, costing, and entrepreneurial skills for home-based bakery enterprises.

V. THEORY LEARNING OUTCOMES AND ALIGNED COURSE CONTENT:

Unit	Content	Hrs.
1	Introduction to Bakery Industry: History and scope of bakery, Different bakery ingredients and it's Functions, Bakery equipment and tools	6
2	Bakery Processes: Different Mixing methods, Fermentation process, baking principles and Cooling and finishing	5
3	Preparation of Bakery Products: Bread making, and Preparation of various product viz., Cakes, muffins, cupcakes, Cookies and biscuits, Puff and pastry products	6
4	Food Safety and Quality Control and hygiene practices, Storage of raw materials, Common defects in bakery products, Troubleshooting techniques	7
5	Different Packaging materials, Shelf life and storage, Costing and pricing, Home-based bakery enterprise	4

VI. LABORATORY LEARNING OUTCOME AND ALIGNED PRACTICAL

1. Identification of bakery ingredients and equipment.
2. Preparation of bread using standard method.
3. Preparation of cakes and muffins.
4. Preparation of cookies and biscuits.
5. Preparation of puff pastry product.
6. Observation of fermentation process.
7. Study of bakery product defects and quality evaluation.

8. Cost calculation of bakery product.
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1. Preparation of a small bakery business plan. 2. Cost analysis of one bakery product. 3. Survey of local bakery shop and report preparation. 4. Preparation of poster on food safety in bakery. 5. Development of innovative bakery product recipe.

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| VIII. LIST OF INSTRUMENTS / EQUIPMENT / TRAINER BOARD | |
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1. Baking oven
2. Weighing balance
3. Mixer / planetary mixer
4. Proofer
5. Measuring cylinders and cups
6. Baking trays and moulds
7. Dough kneader
8. Thermometer
9. Cooling racks

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| IX. LIST OF REFERENCE BOOKS | |
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1. Manley, D. Technology of Biscuits, Crackers and Cookies. Woodhead Publishing.
2. Pyler, E.J. Baking Science and Technology. Sosland Publishing.
3. Cauvain, S.P. & Young, L.S. Technology of Breadmaking. Springer.
4. Srilakshmi, B. Food Science. New Age International Publishers.
5. FSSAI Manual on Food Safety and Hygiene.

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| X.LINK OF LEARNING WEB RESOURCE | |

1. https://www.fssai.gov.in 2. https://icar.org.in 3. https://ndl.iitkgp.ac.in 4. SWAYAM Portal (https://swayam.gov.in)
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| XI. SUGGESTED WEIGHTAGE TO LEARNING EFFORTS & ASSESSMENT PURPOSE | |

Unit	Unit Title	Aligned COs	Learning Hours	U-Level	R-Level	A-Level	Total Marks
1	Introduction to Bakery	CO1	6	10	5	5	20
2	Bakery Processes	CO1, CO3	5	5	5	5	15
3	Bakery Products	CO3	6	5	5	10	20
4	Food Safety & QC	CO2, CO4	7	5	5	10	20
5	Packaging and Enterprise	CO5	4	5	5	5	15
	Grand Total		28	30	25	35	100

Unit	Unit Title	Aligned COs	Learning Hours	U-Level	R-Level	A-Level	Total Marks
1	Introduction to Bakery	CO1	6	10	5	5	20
2	Bakery Processes	CO1, CO3	5	5	5	5	15
3	Bakery Products	CO3	6	5	5	10	20
4	Food Safety & QC	CO2, CO4	7	5	5	10	20
5	Packaging and Enterprise	CO5	4	5	5	5	15
	Grand Total		28	30	25	35	100

Course Outcome (COs)	Programme Outcomes (POs)							Programme Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	1	1	1	1	2	2	1
CO2	2	2	2	1	2	3	2	2	2	1
CO3	3	3	3	1	2	1	1	3	2	1
CO4	2	2	3	2	2	2	1	2	2	1
CO5	2	2	2	3	2	2	3	2	2	2

Course Outcome (COs)	Programme Outcomes (POs)							Programme Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3
CO1	3	2	2	1	1	1	1	2	2	1
CO2	2	2	2	1	2	3	2	2	2	1
CO3	3	3	3	1	2	1	1	3	2	1
CO4	2	2	3	2	2	2	1	2	2	1
CO5	2	2	2	3	2	2	3	2	2	2