



GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Bachelor of Vocation

Level: Under Graduate

Branch: Food Processing and Quality Control

Subject Code: BV04009011

Subject Name: Food Packaging

w. e. f. Academic Year:	2025-26
Semester:	04
Category of the Course:	Core Courses

Prerequisite:	NA
Rationale:	This course provides knowledge of packaging functions, materials, and machinery essential for food safety and preservation. It covers the properties, advantages, and limitations of different packaging materials, along with techniques like filling, sealing, labeling, vacuum, and gas flushing. This course will also provide information effect of packaging on shelf life of food and recent trends in food packaging.

Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes
01	Understand the definition, functions, and classification of food packaging materials and their role in food safety and preservation.
02	Remember the properties, advantages, and limitations of commonly used packaging materials such as glass, metals, paper, plastics, and laminates.
03	Gain knowledge of packaging machinery and techniques for filling, sealing, labeling, vacuum, and gas flushing operations.
04	Understand the impact of packaging on shelf life and explore recent trends including edible, active, biodegradable, and modified atmosphere packaging.

Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+ (PR/2) C	Assessment Pattern and Marks				Total Marks
L	T	PR		Theory		Tutorial / Practical		
			ESE (E)	PA/CA (M)	PA/CA (I)	ESE (V)		
3	0	0	3	50	0	0	0	50



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Course Content:

Unit No.	Content	No. of Hours	% of Weightage
1.	Introduction to Food Packaging Definition and importance of packaging, Functions of packaging and Classification of packaging materials	08	15
2.	Packaging Materials Properties, Advantages and Limitations of the Following Packaging Materials; Glass, Aluminium, Metal, Containers, Paper and Paperboard, Retortable Pouches Plastic Films- LDPE and LLDPE, HDPE, PVC, PS, PP, BOPP	10	20
3.	Packaging Machinery: Form Fill and Seal Machines, Gravitational and Volumetric filling Wrapping and labeling systems, Vacuum and gas flushing machines, Testing & Identification: Testing and Identification of Packaging Materials.	10	25
4.	Packaging and Shelf Life of Food Product: Factors controlling shelf life of packaged food product, Shelf-life estimation in dehydrated food product.	09	20
5.	Recent Trends in Food Packaging: Edible packaging, Active Packaging, Modified atmosphere packaging, Biodegradable packaging	08	20
	Total	45	100



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Suggested Specification Table with Marks (Theory):

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
25	25	0	0	0	0

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

References/Suggested Learning Resources:

(a) Books:

1. Fundamentals of Food packaging by Payne FA
2. Food Packaging by Stanley S
3. Hand book of packaging by Indian Institute of Packaging
4. Food packaging and preservation by M. Mathlouthi. Blackie Academic & Professional

(b) Open-source software and website:

1. [NPTEL](http://www.nptel.edu/)
2. <http://ecoursesonline.iasri.res.in/course/view.php?id=28>
