



GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF ENGINEERING

Subject Code : 3165103

Subject Name: Dairy Technology

WEF Academic Year :	2022-23
Semester :	6
Category of the Course :	Professional Elective - II

Prerequisite: Nil

Rationale: This course includes the study of milk from farm gate all the way through the distribution, storage, manufacturing and applications of dairy products. Practices that affect milk quality and the technology of milk processing and dairy products manufacture are the main emphasis of this course.

Course Scheme:

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
3	0	2	4	70	30	30	20	150

Course Content:

Sr. No.	Course Content	No. of Hours	% of Weightage
1	Market Milk: Review of Dairy Development in India, Milk Composition and Constituents; Factors Affecting Composition of Milk; Physio-chemical Properties of Milk; Flavour Defects in Milk	7	20
2	Special Milk: Sterilized Milk; Homogenized Milk; Flavoured Milk; Standardized Milk; Reconstituted/Re-hydrated Milk; Recombined Milk; Toned Milk	7	15
3	Butter: Cream: Classification, Types and Methods of Separation; Butter: Composition and Types; Process of Butter Production, Overrun; Fat Losses in Butter Making	6	15
4	Ice Cream: Composition; Role of Ingredients, Details of Production; Overrun in Ice cream	7	15
5	Cheese: Composition; Types of cheese, Details of manufacturing of Cheddar Cheese, Processed cheese manufacturing	8	20
6	Condensed and Dried Milks: Composition; Types of Condensed Milk; Flow Diagram of Condensed Milk production; Dried milk composition, Malted Milk Food	7	15

Reference Book:

1. Outlines of Dairy Technology by Sukumar De. Oxford University Press



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2. Indian Dairy Products by Rangappa KS. Asia Publishing House
3. Engineering for Dairy and Food Products by Farrall AW. John Wiley and Sons
4. Cheese and Butter. V. Cheke & A. Sheeprd. Agrobios (India)
5. Technology of Indian Milk Products by R P Aneja, B N Mathur, A Dairy India Publication, Delhi, India
6. Dairy Plant Engineering and Management by Tufail Ahmed, Kitab Mahal.

Suggested Course Practical List:

- To conduct platform test for checking suitability milk for processing
- To estimate acidity of given milk sample
- Determination of fat content in milk by Gerber's method
- Determination of protein in milk by Formal Titration method (Pyne's method)
- To estimate the Solid Not Fat content in the given sample of milk by using lactometer
- To prepare Khoa or Mava from the given milk sample
- Preparation of Paneer
- Preparation of Chhana and chhana based product
- Judging and grading of quality of Butter
- Calculation of overrun in butter

List of Laboratory/Learning Resources Required:

Equipment:

- Centrifugal Cream Separator
- Milko-tester
- Centrifuge
- Steam jacketed kettle
- Water bath

List of Open Source Software/learning website:

- <http://www.nddb.org>
- <http://www.amul.com/>
- <http://www.dairyfoods.com/>
- <http://www.fao.org/agriculture/dairy-gateway/milk-production/en/>

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