

**SRI VENKATESWARA UNIVERSITY**

**B.Sc. DEGREE COURSE IN DAIRY SCIENCE  
(MINOR)**

**IV Semester – W.E.F. 2024-25**

**Processing of Milk (Market Milk)**

**Theory: Credits -3**

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**UNIT-I**

- (a) Reception of Milk - Unloading, Grading, Sampling, Testing, Weighing and Recording.
- b) Storage of Milk c) Straining, Filtration and Clarification of Milk.

**UNIT-II:**

Pasteurization of Milk - Definition, Objectives, Principles of Heat exchange, Methods of Pasteurization - (LTLT, HTST, Uperization). UHT and Sterilization of Milk.

**UNIT- III:**

- a) Homogenization of Milk - Factors influencing Homogenization of Milk (Temperature and Pressure), Effect of Homogenization on Milk. (b) Standardization of Milk: Standardization using Pearson square method.

**Unit-IV:**

- a) Market Milk- Toned milk, Double toned milk, Reconstituted milk, Standardized milk, and Full cream milk - Standards and methods of manufacture.
- (b) Packaging of Milk - Desirable characters and types of packaging materials, Forms of Packaging.

**UNIT V:**

- (a) Cleaning and sanitation of dairy equipment: Types of cleaning and sanitizing agents, mode of action, different types of cleaning methods, (i) Hand washing, (ii) Mechanical washing (iii) Cleaning – in – place (CIP).
- (b) Disposal of Dairy effluents: Sources of Dairy wastes, Necessity of treating Dairy wastes, methods of treatment, Low-cost methods, Conventional methods, Activated sludge process and trickling filters.

**IV Semester**  
**Processing of Milk (Market Milk)**  
**Practical: Credits -1**

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1. RMRD Testing of Milk (Platform tests).
2. Standardization of Milk.
3. Homogenization of Milk.
4. Pasteurization of Milk.
5. Sterilization of Milk.
6. Preparation of Toned Milk.
7. Preparation of Double Toned Milk.
8. Preparation of Reconstituted Milk.
9. Cream Separation.

**Reference Books:**

1. Outlines of Dairy Technology – Sukumar De
2. Milk Products Preparation and Quality Control – C.P. Anantha Krishnan
3. The Technology of Milk Processing – C.P. Anantha Krishnan
4. Modern Dairy Products – Lincoln M Lampert.

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**IV Semester – W.E.F. 2024-25**

**Technology of Fat-Rich Dairy Products**

**Unit-1:**

**Unit-1:**  
Cream : Definition and legal standards, efficiency of cream and factors responsible for fat loss in butter milk. Control of fat content in cream. Packaging and storage of cream. Methods of manufacture of cream.

**Unit-2:**

**Unit-2:**  
(a) Neutralization, standardization, pasteurization and cooling of cream. (b) Different types of cream; table cream, sterilized cream, whipped cream, plastic cream and frozen cream. (c) UHT processing of cream. (d) Factors affecting quality of cream; ripening of cream. (e) Defects in cream and their prevention.

**Unit-3:**

**Unit-3:**  
Butter: (a) Introduction to the butter making process; theory of churning, legal standards. (b) Technology of butter manufacture, Batch and continuous methods. (c) Over – run in butter; control of fat losses in butter - milk; packaging and storage; transportation; defects in butter; uses of butter; Preparation of Desi butter.

**Unit-4:**

**Unit-4:**  
(a) Ghee : Preparation of ghee from cream and butter. Methods of ghee making - batch and industrial processes, innovations in ghee production, procedure, packaging and preservation of ghee. (b) AG Mark Standards and FSSAI Standards for Ghee.

**Unit-5:**

**Unit-5:**  
Utilization of dairy by-products – skim milk, butter milk, whey etc. Butter oil: Manufacture of butter oil, packaging and storage.

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**IV Semester**  
**Technology of Fat – Rich Dairy Products**

**Practical: Credits-1**

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1. Preparation of White butter and Table butter.
2. Calculation of Over run in butter.
3. Cream separation.
4. Estimation of fat percentage in cream.
5. Estimation of fat %in buttermilk.
6. Estimation of fat %in butter.
7. Neutralization of cream.

**ReferenceBooks:**

1. Outlinesof Dairy Technology-SukumarDe
2. MilkandMilk Products - Eckles, Combsand Macy
3. Milk, Milk Products and Quality Control - C.P.Anantha Krishnan
4. The Technology of Milk Processing-C.P. Anantha Krishnan.