

**Rayat Shikshan Sanstha's
Sadguru Gadage Maharaj College, Karad
Department of Chemistry
A CERTIFICATE COURSE IN, "MILK ANALYSIS"**

- Duration of the course : 03 Months
(24 Theory + 76 Practical periods = 100 hours)
- Total marks : 100 (50 Theory + 50 Practical)
- Course coordinator : Dr. Sandip Vinayak Mahamuni
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THEORY SYLLABUS

Objectives:

To enable students –

1. To understand techniques in Milk and Milk Product processing
2. To study the working of equipments used in Milk and Milk Product Processing

Unit – I - Introduction to Milk and milk products

- Definition, Production and processing of milk
- Types of Milk Products
- Equipments used in dairy industry

Unit – II - Composition of milk

- Physio-chemical properties
- Composition and Nutritive value
- Factors affecting composition of milk
- Effect of heat, acid and microorganism on milk

Unit – III - Processing of milk

- Pasteurization
- Sterilization
- Dehydration

Unit – IV - Special Milks

- Re-constituted or Re-hydrated milk
- Condensed milk, Toned milk and Flavored milk
- UHT Milk

MILK PRODUCTS:

Unit – V - Butter and Butter oil

- Definition and composition
- Process of manufacture
- Uses

Unit – VI - Cheese

- Definition & Composition
- Process of manufacture
- Uses

Unit – VII - Ice-cream

- Definition & Composition
- Ingredients & their role
- Process of manufacture

Unit –VIII - Indigenous Milk Products

- Dahi/Curds, Lassi,
- Channa/ Paneer, Rasgulla
- Khoa, Gulabjam
- Chakka, Shrikhand

Unit –IX: Qualitative and quantitative analysis of milk and milk products

PRACTICAL SYLLABUS

1. Physical examination of milk
2. Determination of pH of milk
3. Estimation of specific gravity of milk
4. Estimation of milk acidity
5. Detection of adulteration in milk
6. Determination of FAT: Gerber method
7. Determination of casein
8. Determination of lactic acid
9. Determination of total solids
10. Determination of Ca
11. Determination of SNF
12. Preparation of flavored milk
13. Preparation of condensed milk
14. Visit to milk processing industry

References:

- 1) Dey S., 1994, Outlines of Dairy Technology, Oxford Univ. Press, New Delhi.
- 2) Rosenthal I., 1991, Milk and Milk Products, VCH, New York.
- 3) Robinson R. K., (2 vol. set), 1986, Modern Dairy Technology, Elsevier Applied Science, UK.
- 4) Warnar J. M., 1976, Principles of Dairy Processing, Wiley Eastern Ltd, New Delhi
- 5) Manual of methods of analysis of foods: Milk and Milk products: Food Safety and Standards Authority of India, Ministry of Health and Family Welfare, Government of India, New Delhi, 2015.
