

**Course Code : LPM 304**  
**Course Title : Introductory Dairy Science**  
**Credit Hours : 3(2+1) Full Marks: 75 Theory: 50 Practical: 25**

## OBJECTIVES

Upon the completion of this course, the students will be able to collect samples, test and standardize milk and milk products.

## I. SYLLABUS

Introduction, Dairying in Nepal, Its scope and comparison with developed countries. Milk: Definition of milk, and diagrammatic representation of milk constituents, composition of milk, factors affecting the composition, nutritive values and physical and chemical properties of milk. Physiology of lactation Mammary gland and hormones related to development of udder, milk secretion and letdown of milk. Milking: Method of milking, clean milk production, importance and factors affecting the clean milk production, Flavor defects in milk, Dairy microbiology: Types of M. O., their sources of contamination, uses and significance of M. O. in dairy industry.

## II. COURSE OUTLINE

### A. Lecture

S.N.	Topics	No.of Lectures
1.	Introduction to course outline and evolution system	1
2.	Dairying in Nepal and its Scope	1
3.	Comparison of Nepalese dairy with that of developed countries	2
4.	Milk: Definition, and diagrammatic representation of milk constituents	1
5.	Composition of milk (fat, lactose, protein, energy, vitamins and minerals)	2
6.	Nutritive value of milk	1
7.	Physical and chemical properties of milk	2
8.	Factors affecting the composition of milk	2
9.	Physiology of lactation: Mammary glands and hormones related to development of udder	2
10.	Milk secretion and letdown of milk	3
11.	Milking: Methods of milking: hand milking vs. machine milking	1
12.	Clean milk production: Importance and factors affecting the clean Milk production	1
13.	Natural flavors and off flavors of milk	1
14.	Flavor defects in milk and their prevention measures	1
15.	Dairy microbiology: Brief outline	1
16.	Types of microorganism found in milk	1
17.	Sources of contamination in milk	1
18.	Uses of beneficial microorganism in milk	2
19.	Significance of microorganism in dairy industry	1
20.	Preparation of common dairy products (Dahi, Cheena, Khoa, Paneer, and ice cream)	3
<b>Total</b>		<b>30</b>

## B. Practical

S.N.	Topics	No. of Practicals
1.	Study of commonly used dairy equipments	1
2.	Study of milk sampling procedures	1
3.	Sediment test by using disc and sediment tester	1
4.	Estimation of fat by Gerber's method	1
5.	Estimation of specific gravity, SNF and T.S in milk	1
6.	COB and titrable acidity test in milk	1
7.	Study of MBR test for assessing microbiological quality of milk	1
8.	Study of mammary gland and physiology of lactation	2
9.	Study and practices of hand milky	1
10.	Estimation of M.O. by using microscopes and CMT paddle	2
11.	Preparation of Dahi, Cheena, Paneer, and Khoa	2
12.	Standardization of milk and cream	1
<b>Total</b>		<b>15</b>

## REFERENCES

Clarence, H.E., W.B. Combs and H.Macy.1994.Milk and Milk Products.TATA Mc Graw Hill Publishing Co.Ltd, India

Sukumar, De 2000.Outlines of Dairy Technology, Oxford University.Press India

Prasad J. 1997.Animal Husbandry and Dairy Science.Kalyani.Publishers.India