

SRI VENKATESWARA UNIVERSITY

II Year syllabus for 4 year UG Honors in B.Sc., Dairy Science as Major in consonance with
curriculum frame work w.e.f. 2026-2027

COURSE STRUCTURE FOR III Semester

Year	Semester	Course	Title	No. Hrs./ Week	No. of Credits
II	III	5	Dairy Chemistry (Chemistry of fluid milk) - (T)	3	3
			Dairy Chemistry (Chemistry of fluid milk) - (P)	2	1
		6	Dairy Microbiology- (T)	3	3
			Dairy Microbiology- (P)	2	1
		7	Dairy farm management- (T)	3	3
			Dairy farm management- (P)	2	1


Head
Dept. of Dairy Technology
College of Dairy Technology
S.V. Veterinary University
Tirupadi - 517302, A.P.

III Semester

Course 6: Dairy Microbiology (Microbiology of market milk)

Hours/Week: 3

Credits -3

Unit-1: Definition. Microscopy – Simple. Compound - bright-field microscopy. Structure and functions of prokaryotic cells; Taxonomy of Microorganisms - Classification. nomenclature. identification; Differences between cell wall of Gram positive and Gram negative bacteria.

Unit-2: Sources of contamination of milk and their control: exterior of the animal, interior of the udder, utensils, water, milkers, flies and insects, soil and manure, milking barn, cattle shed and surroundings. Methods of clean milk production.

Unit-3: Sources and Significance of specific groups of microorganisms in milk i.e. psychrotrophic, mesophilic, thermotolerant and thermophilic bacteria - their morphological and biochemical characteristics. Types of Microorganisms in milk such as acid producing, gas producing, protein splitting, fat splitting microbes; Pathogens associated with raw milk and inert organisms.

Unit-4: Chemical changes observed during storage of milk and abnormal fermentations observed in milk: souring, gassy fermentation, proteolysis, lipolysis, ropiness, and flavor fermentations. Factors affecting growth of bacteria. Common nutrient requirements and nutritional types of microorganisms.

Unit-5: Milk borne diseases: bacterial, viral and other diseases.

Microbiological examination of milk: direct microscopic count, standard plate count, methylene blue reduction test, resazurin reduction test and coliform test. Microbiological grading and legal standards of raw and processed milk.

III Semester

Course 6: Dairy Microbiology (Microbiology of market milk)

Hours/Week: 2

Credits -1

1. Microbiological equipment: autoclave, hot air oven, incubator centrifuge, colorimeter, laminar airflow, membrane filter.
2. Staining of Microbes: Simple staining- methylene blue and Differential staining (Gram)
3. Preparation of commonly used growth media liquid and solid
4. Grading of raw milk by direct microscopic count.
5. Grading of raw milk by standard plate count
6. Grading of raw milk by coliform counts
7. Grading of raw milk by methylene blue reduction time.
8. Grading of raw milk by resazurin reduction test
9. Enumeration of psychrophilic and thermophilic microorganism in milk

Reference books:

1. Dairy Microbiology - R K Robinson
2. Milk products preparation and quality control - C P Ananthakrishnan
3. Food Microbiology - W C Frazier

4- Year UG Honours, Major
Syllabus
(2026-27)
Semester-III

Model Question Paper

Time : 3hrs

Marks:75

Part-A

Answer any Five Questions. Each Question carries 3 Marks.

5x3=15

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Answer the following questions. Each question carries 12 Marks

5x12=60

11. a) Unit-I
(Or)
b) Unit-I

12. a) Unit-II
(Or)
b) Unit-II

13. a) Unit-III
(Or)
b) Unit-III

14. a) Unit-IV
(Or)
b) Unit-IV

15. a) Unit-V
(Or)
b) Unit-V