

LECTURE SCHEDULE

Department: Dairy Technology

Course No. - DTT-121

Course Title: Market Milk

Credit Hrs- 4 (3+1)

Course Teacher: Dr. Sanjeev Kumar

Theory

S. No	Topics to be covered	No. of classes
1	Market milk industry in India and abroad.	01
2	Collection and transportation of milk.	01
3	Reception and treatment (pre-processing steps) of milk in the dairy	02
4	Reception, chilling, clarification and storage General practices.	02
5	Definition and description Pasteurization: Different Methods, objectives, limitation etc.	02
6	Homogenisation: Definition, pre-treatment, theories,	02
7	Effect of homogenization on physical properties of milk.	01
8	Bactofugation: Theory and microbiology.	01
9	Defects in Market Milk.	01
10	Alternative methods of pasteurization.	01
11	Thermisation, Factors affecting thermal destruction of microorganisms	01
12	Kinetics of microbial destruction, thermal death curve, D, Z F, value , F value, O_{10} value Arrhenius.	01
13	Sterilization principles and methods.	01
14	Chemical and biological methods of preservations of milk.	01
15	Natural milk inhibitors.	02
16	LP System: principle and concepts.	02
17	Manufacture of special milks: toned, doubled toned, reconstituted, recombined, flavoured, homogenized milk.	02
18	Manufacture of sterilized milk.	01
19	Distribution systems for market milk. UHT processing of milk.	02
20	UHT plants: Description. Direct, Indirect, with upstream and downstream.	02
21	Relevance of UHT processing in the tropical climate.	01

22	UHT Processing. Concepts UHT milk defects and preventions.	02
23	homogenization, Third generation UHT plants..	01
24	Cleaning and sanitization of dairy equipment.	02
25	Aseptic packaging, types and systems of packaging, sterilizing packages, filling systems.	02
26	Affect of UHT, treatments on quality of milk (Composition, Chemical, microbiological).	02
27	Shelf life of UHT milk and tests for UHT milk.	01
28	Nutritive value of UHT milk. Effect of heat processing on nutritive value.	01
	Total	41

Practical (DTT-121)

Sl. No	Practical to be covered	No. of classes
1	Familiarization with equipments for reception of milk plant (PDP).	01
2	Sensory evaluation of milk.	01
3	Platform test and visit of platform of PDP.	01
4	Preparation of Gerber Sulphuric solution, Amyl Alcohol.	01
5	Detection of adulterants and preservatives in milk.	01
6	Standardization and numerical for making different types of milk.	01
7	Cream separation: parts of separator and the process (PDP).	01
8	Study about Pasteurizer, Homogenizer (PDP).	01
9	Chemical tests for assessing milk quality/ grading of milk.	01
10	UHT Plant visit Nalanda Dairy project.	01
11	CIP of storage tanks ,cream separators HTST plants (PDP).	01
12	Preparation of flavoured milk, (Sensory analysis, Analysis of Fat, Acidity, T.S).	01
13	Preparation of sterilised milk (Analysis of Fat, Acidity).	01
14	Preparation of, standardised milk (Fat, TS, acidity etc).	01
15	Strength of common detergents and sanitizers used in market milk plant. (PDP).	01
16	Strength of common detergents and sanitizers used in market milk plant. (PDP).	01
	Total	16

Suggested Readings:

1. Technology of milk processing Anantkrishnan, C P (etc) Madras: Shri Lakshmi.
2. Milk and milk processing Herrington, B L Lucknow: Greenworld Publishers.
3. Manual of dairy processing Mathur, M P New Delhi: Panima.
4. Quality milk production and processing technology Thompkinson, D K and Sabhiki, Latha New Delhi: New India Publishing Agency.
5. Ultra-high-temperature processing of milk and milk products Burton, H London: Elsevier Applied Science