

LECTURE SCHEDULE

Department: Dairy Microbiology

Course No. - DTM-222

Course Title: Microbiology of Dairy Product Credit Hrs-2 (1+1)

Course Teacher: Dr. Sonia Kumari

Theory

S. No.	Topics to be covered	No. of Classes
1	Microbiology of cream and butter Microenvironment and impact of critical process aspects on entry of spoilage and pathogenic organism in cream and butter.	02
2	Microbiological aspects viz. Defects in pasteurized (Ripened/Un ripened), Sterilized and UHT cream. Factors influencing the microbial growth during Batch/ Continuous growth process.	02
3	Butter making process, Discoloration microbial defects in Butter-Bacterial Mold, Enzymatic deterioration and their control measures.	02
4	Microbiology of Evaporated and dried products: Types of microorganisms associated with condensed, evaporated and dried products, their growth/survival during manufacture and storage.	02
5	Microbial defects- Bacterial thickening / Mold button formation in SCM (Sweetened condensed milk), Gassiness, and Bloatiness. Bacterial coagulation (sour and Sweet), Bitterness, fishy flavour in evaporated milk.	02
6	Effect of Preheating and its impact on milk powder including baby foods and survivability of pathogen.	01
7	Microbiology of Ice cream and frozen desserts: Microenvironment in ice cream, microbiological quality of ingredients, critical process factors and their impact on entry of pathogen.	02
8	Cream and frozen desserts, Their survival during storage, food poisoning outbreak and legal standards.	02
9	Microbiology of indigenous milk Products Predominance of spoilage and pathogenic organisms in Khoa and Khoa based sweets – Rasogulla, Kheer, Shirikhand, Dahi, Kulfi etc.	02
10	Factors affecting the microbiological quality in reference to production, Processing, storage and distribution.	02
11	Microbial safety in relation to pathogens and their public health significance.	02
12	Microbial defects, control measures and legal standards.	01
13	Active packaging concepts and role in bio-preservation.	02
	Total	28

Practical (DTM-222)

S. No.	Practical to be covered	No. of Classes
1	Microbiological examination of raw, Pasteurized, sterilized and UHT cream for Standard Plate Count and Coliform Counts, Direct Microscopic Count.	02
2	Microbiological examination of salted and unsalted butter for SPC.	02
3.	Psychrotrophic, Coliform, Yeast and Molds count of salted and unsalted butter.	02
4	Microbiological examination of concentrated milk for SPC, Coliform, and Spores count,	02
5.	Yeast & Mold, Thermophillic and Thermoduric counts of concentrated milk.	02
6	Microbiological examination of dried milk for SPC and Coliform	02
7	Microbiological examination of Khoa for SPC.	02
8	Coliform, Yeast and Molds count for Khoa.	02
9	Microbiological examination of Paneer and Shrikhand for SPC, Spores, Coliform, Yeast and Molds.	02
10.	Microbiological examination of packaging material for SPC, Spores and Yeast and Molds count.	02
	Total	20

Suggested Reading:

1. Food and Dairy microbiology by M.K.Rao (Manglam Publishers and Distributors)
2. .Dairy Microbiology, Hand book by R.K. Robinson (Wiley Inter science).
3. Dairy Microbiology by P. Parihar (Agrobios India).
4. Applied Dairy microbiology (food Science and Technology) by Elmer H. Marth and James Steole (CRC Press).