



(M.Sc. – Home Science) (Food Biotechnology)  
(M.Sc. - H.Sc.) (Food Biotechnology) Semester (I)

Course Code	PH01EFBT52	Title of the Course	Practical based on PH01EFBT51 (Food Microbiology)
Total Credits of the Course	02	Hours per Week	02

Course Objectives:	1. To acquaint the students with basic laboratory skills in microbiology as well as to acquaint them with the enumeration of bacteria in food and water samples
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Course Content		
Unit	Description	Weightage (%)
1.	Staining techniques – Gram staining, methylene blue staining, spore staining, capsule staining	25
2.	Bacteriological examination of water – SPC of different sources of water - on nutrient agar, Hichrome agar for E. Coli, etc	15
3.	Bacteriological examination of milk and curd – MBRT test to assess the quality of milk, SPC using nutrient agar, lactobacillus count on MRS agar, yeast and mold count on PDA agar, etc	20
4.	Microbial count of different foodstuff – SPC on nutrient agar, yeast and mould count on PDA from different food stuff, e.g. sweet preparations such as ice-creams, street foods such as panipuri, etc	15
5.	To perform various biochemical tests used in the identification of commonly found bacteria in foods (eg. E. Coli), IMViC, urease, H <sub>2</sub> S, catalase, coagulase, gelatinase and sugar fermentation (acid/gas)	10
6.	Preparation of fermented foods: yoghurt, tempeh, saurkaut	15

Teaching-Learning Methodology	Classroom lectures (Blackboard), demonstration and then actual performance by students, discussion of results.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage





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1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will have mastered:

1.	Basic laboratory skills in microbiology.
2.	Different bacterial staining techniques.
3.	Enumeration of bacteria in food and water samples.
4.	The preparation of selected fermented foods.

Suggested References:

Sr. No.	References
1.	Patel Rakesh, J. & Patel Kiran, R. (2015) <i>Experimental Microbiology Vol. 1.</i> (8 <sup>th</sup> Edition). Aditya Publication, Ahmedabad.
2.	Sharma, K. <i>Manual of Microbiology, Tools &amp; Techniques.</i> (2 <sup>nd</sup> Edition). Ane Books Pvt. Ltd.

On-line resources to be used if available as reference material

<https://old.fssai.gov.in/Portals/0/Pdf/15Manuals/MICROBIOLOGY%20MANUAL.pdf>

[https://www.researchgate.net/publication/306018042\\_Microbiology\\_Laboratory\\_Manual/link/57aaf3c508ae42ba52ae6db2/download](https://www.researchgate.net/publication/306018042_Microbiology_Laboratory_Manual/link/57aaf3c508ae42ba52ae6db2/download)

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