Department of Liberal Education
Era University, Lucknow
Course Outline
Effective From: 2023-24

Name of the Program	**B.A. / B.Sc. (LIBERAL EDUCATION)**			**Year/ Semester:**	**3rd / 6th**
Course Name	Food Microbiology Practical Training	**Course Code:**	**MB305P**	**Type:**	**Practical**
Credits	**01**			**Total Practical Hours:**	**30 Hours**
Evaluation Spread	**Internal Continuous Assessment:**	**10 Marks**		**End Term Exam:**	**15 Marks**
Type of Course	○ Compulsory	◉ Core		○ Creative	○ Life Skill
Course Objectives	1. This course will give the knowledge to develop skill for identifying microbes used in food microbiology. 2. Through this learner will be able to culture of microorganisms used in Food microbiology.				

Course Outcomes (CO): *After the successful course completion, learners will develop following attributes:*

Course Outcome (CO)	Attributes
CO1	Students will learn the identification of morphological structures of different microbes of food microbiology
CO2	Students will learn bacteriological analysis of food products
CO3	Students will be able to understand the preservation methods
CO4	Learner have the ability to learn the technique isolation of yeast from bread and isolation of moulds from cereal samples
Pedagogy	Interactive, discussion-based, student-centered. program outputs.
Internal Evaluation Mode	Experiment-Writing and Conductance File Maintenance/ Laboratory Record Continuous Attendance and Participation

Practical No.	Experiments	Contact Hours	Mapped CO
1.	Identification of morphological structures of different microbes of food microbiology	4	**CO1**
2.	Bacteriological analysis of food products	4	**CO2**
3.	Preservation methods	6	**CO3**
4.	Isolation of yeast from bread	8	**CO4**
5.	Isolation of moulds from cereal samples	8	**CO4**

CO-PO and PSO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	1	1	2	2	2	2	1	2	2	2	1	1	
CO2	1	1	1	2	2	2	2	1	2	2	2	1	1	
CO3	1	1	2	2	2	2	2	1	2	2	3	1	1	
CO4	1	1	2	2	2	2	2	1	2	2	3	1	1	

Strongcontribution-3, Averagecontribution-2, Lowcontribution-1,

Suggested Readings:	
Reference Books	1. Aneja, K.R. 1993. Experiments in Microbiology, Pathology and Tissue Culture, Vishwa Prakashan, NewDelhi. 2. Dubey, R.C. and Maheshwari. D.K. 2012. Practical Microbiology, S.Chand & Company, Pvt. Ltd., New Delhi.
E-Resources	1. http://www.vlab.co.in 2. http://www.vlab.iitb.ac.in 3. http://www.onlinelabs.in 4. http://www.vlab.amrita.edu 5. http://asm.org/articles/2020/december/virtual-resources-to-teach-microiology-techniques 6. http://foodhaccp.com/foodsafetymicro/onlineindex.html 7. http://www.cpe.rutgers.ed/courses/current/If0401wa.html

Internal Practical Evaluation:

Component	Marks
Experiment-Writing and Conductance	5
File Maintenance/ Laboratory Record	2
Continuous Attendance and Participation	1
Viva-Voce	2
Total Marks	10

Course created by: Dr.Manaal Zahera

Signature:

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Signature: