

YEAR – I	FUNDAMENTALS OF MICROBIOLOGY (For the students who are admitted in the year 2019 – 2020 and onwards)	19MB101
SEMESTER - I		HRS/WK - 4
CORE - 1		CREDITS - 4

Objective: To make the students understand the basic principles in Microbiology

Course Outcomes:

Upon successful completion of the course, the student:

CO 1: will be able to appreciate the discoveries in Microbiology

CO 2: will be able to identify the various structures in bacterial cell

CO 3: will be able to apply the principles of various microscopes

CO 4: will be able to explain different methods of physical sterilization

CO 5: will be able to elaborate chemicals used in sterilization

SEMESTER: I	COURSE CODE: 19MB101					COURSE TITLE: FUNDAMENTALS OF MICROBIOLOGY			HOURS : 3	CREDITS : 3
COURSE OUTCOMES	PROGRAMME OUTCOMES (PO)					PROGRAMME SPECIFIC OUTCOMES (PSO)			MEAN SCORE OF COs	
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3		
CO1	3	5	4	2	2	5	3	3	3.2	
CO2	2	5	3	4	3	4	5	4	3.7	
CO3	2	4	4	4	3	4	5	5	3.7	
CO4	3	5	4	4	4	4	5	5	4.2	
CO5	3	5	4	5	5	4	5	5	4.5	
Mean Overall Score									3.8	

Result: The score of this course is 3.8 (High)

Association	1%-20%	21%-40%	41%-60%	61%-80%	81%-100%
Scale	1	2	3	4	5
Interval	0<=rating<	1.1<=rating<	2.1<=rating<	3.1<=rating<	4.1<=rating<

	=1	=2	=3	=4	=5
Rating	Very Poor	Poor	Moderate	High	Very High

This Course is having **HIGH** association with Programme Outcomes and Programme Specific Outcomes.

Unit – 1 **(9 Hrs)**

Introduction - History (**Discoveries - Contributions of Women Scientists in Microbiology**) - Scope of Microbiology - Employability in Microbiology (Job opportunities and Entrepreneurship)

Unit – 2 **(9 Hrs)**

Morphology - Shape, size, arrangement of Bacteria - Structure of bacterial cell - Structure and functions of cell organelles (Cell wall, structures found outside the cell wall and within the cell wall) - Structure of Endospore

Unit – 3 **(9 Hrs)**

Microscopy - Simple, Compound, Dark-field, Phase-contrast, Fluorescent, Electron Microscopes - Stains and dyes – staining methods.

Unit – 4 **(9 Hrs)**

Sterilization - Physical agents - High temperature, Low temperature, Desiccation, Osmotic pressure, Radiation, Filtration

Unit – 5 **(9 Hrs)**

Sterilization - Chemical agents - Phenols and phenolic compounds, Alcohols, Halogens, Heavy metals and their compounds, Dyes, Synthetic detergents, Quaternary ammonium compounds, Aldehydes, Gaseous agents -Antibiotics - Classification, Mode of action – Antifungal and antiviral agents.

Text Book

- Prescott, L. M., J. P. Harely and D. A. Klain, Microbiology, 2003 (5th Edition) McGraw Hill, New York.

Reference Books

- Atlas R. A. Principles of Microbiology (2nd Edition), 1997. Wm. C. Brown Publishers, Iowa.
- Salle A. J., Fundamental Principles of Bacteriology, 1974 (TMH Edition), Tata McGraw Hill Publishing Company, New Delhi.

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