

Name of Faculty:- Neeru Rani
 Discipline: - Food tech.
 Semester: - Ist
 Subject: - Basic Microbiology
 Lesson plan duration:- 14 weeks (Aug 2025 to Nov 2025)
 Work load (Theory / Practical) per week (in hours): Theory-02, Practical-04

Week	Lecture Day	Topic
1st	1	Introduction to microbiology
	2	Definition of Microbiology
	3	To list the Good laboratory practices and laboratory precautions.
	4	To identify the equipment related to microbiology.
2nd	1	micro-organisms, microscope
	2	radiation, sterilization, filtration
	3	To establish the Standard Operating Procedure (SOP) for the cleaning of glass wares.
	4	To establish the Standard Operating Procedure (SOP) for the cleaning of glass wares.
3rd	1	asepsis, pasteurization.
	2	Historical developments in microbiology
	3	To prepare different culture media.
	4	To prepare different culture media.
4th	1	Classification of living system
	2	Whittaker's five kingdom concept,
	3	To draw a compound microscope and label its parts.
	4	To draw a compound microscope and label its parts.
5th	1	REVISION
	2	SESSIONAL-I
	3	To sterilize glassware and culture media by moist heat-autoclave.
	4	To sterilize glassware and culture media by moist heat-autoclave.
6th	1	Classification of microorganisms (Unicellular, Multi-cellular)
	2	Prokaryotes, eukaryotes
	3	To sterilize glassware and culture media by dry heat-hot air oven.
	4	To sterilize glassware and culture media by dry heat-hot air oven.
7th	1	Cell and cell organelles - their functions.
	2	Stains: methods of staining (simple staining and differential staining).
	3	To perform simple staining of bacterial cells.
	4	To perform simple staining of bacterial cells.
8th	1	Pure culture: Isolation techniques of pure culture
	2	(streak plate, pour plate, spread plate and serial dilution technique)
	3	To prepare nutrient agar and broth.
	4	To prepare nutrient agar and broth.
9th	1	REVISION
	2	SESSIONAL-II
	3	To perform aseptic transfer of culture
	4	To perform aseptic transfer of culture
10th	1	Preservation method of pure culture
	2	Microbial growth
	3	To enumerate the bacteria in the media by pour plate technique.
	4	To enumerate the bacteria in the media by pour plate technique.
11th	1	Nutrient requirement of micro-organisms.
	2	Growth curve and its different phases
	3	To enumerate the bacteria in the media by spread plate technique.
	4	To enumerate the bacteria in the media by streak plate technique
12th	1	factors affecting microbial growth.
	2	Bacteria: Structure, size and shape. Gram positive and negative bacteria.
	3	To count the number of cells in a culture
	4	To perform simple staining of bacteria
13th	1	Types depending upon different requirements. Mode of reproduction.
	2	Fungi: Structure, growth requirements of yeast and mould. Mode of reproduction and importance
	3	To perform the differential staining/ Gram staining of bacteria.
	4	To perform the differential staining/ Gram staining of bacteria.
14th	1	REVISION
	2	SESSIONAL-III
	3	To perform capsule staining.
	4	To perform spore staining.