JHARKHAND Rai University
UGC RECOGNISED UNIVERSITY
ACCREDITED BY NAAC

Lesson Plan & Tracking

Program: B.Pharm.	Session : 2021-2025	Year : Second	Semester: III

Course: Pharmaceutical Microbiology (Theory)

Name of the Faculty: Prof. Syed Mohammad Abdullah	Commencement Date: 29/08/2022	Date of Closure:

Lecture No.	Week	Unit	Topics to be Covered	Blended Mode			Date	Duration	Tracking of Lectures	Related Course Outcome	Signature of Faculty	Signature of HoD	Remarks (if any)
				ICT Tool/Platform/ LMS	Resources	Activity							
1	1	I	Introduction, history of microbiology, its branches, scope and its importance.										
2			Introduction to Prokaryotes and Eukaryotes.										
3			Study of ultra-structure and morphological classification of bacteria.										
4			Nutritional requirements and Raw materials used for culture media.										
5	2	I	Physical parameters for growth, growth curve.										
6			Isolation and preservation methods for pure cultures.										
7			Cultivation of anaerobes.										
8			Quantitative measurement of bacterial growth (total & viable count).										
9			Study of different types of phase contrast microscopy.										

10	3	**I & II**	Dark field microscopy and electron microscopy.										
11			Identification of bacteria using staining techniques (simple, Gram's & Acid fast staining).										
12			Biochemical tests (IMViC).										
13	4	**II**	Study of principle, procedure, merits, demerits and applications of physical method of sterilization.										
14			Study of principle, procedure, merits, demerits and applications of mechanical method of sterilization.										
15			Study of principle, procedure, merits, demerits and applications of chemical gaseous method of sterilization.										
16			Study of principle, procedure, merits, demerits and applications of radiation method of sterilization.										
17	5	**II & III**	Evaluation of the efficiency of sterilization methods.										
18			Equipments employed in large scale sterilization.										
19			Sterility indicators.										
20			Study of morphology, classification, reproduction/ replication and cultivation of Fungi.										
21			Study of morphology, classification, reproduction/ replication and cultivation of Viruses.										

22			Classification and mode of action of disinfectants.										
23	6	**III**	Factors influencing disinfection, antiseptics										
24			Evaluation of bacteriostatic actions.										
25			Evaluation of bactericidal actions.										
26			Sterility testing of products (solids, liquids, ophthalmic and other sterile products) according to IP, BP and USP										
27	7	**IV**	Designing of aseptic area										
28			Laminar flow equipment										
29			Study of different sources of contamination in an aseptic area and methods of prevention.										
30			Clean area classification.										
31	8	**IV**	Principles and methods of different microbiological assay.										
32			Methods for standardization of vitamins.										
33			Methods for standardization of antibiotic.										
34			Methods for standardization of amino acids and new antibiotics.										
35	9		Types of spoilage.										
36		**V**	Factors affecting the microbial spoilage of pharmaceutical products.										
37			Sources and types of microbial contaminants.										

38	10	V	Assessment of microbial contamination and spoilage.										
39			Preservation of pharmaceutical products using antimicrobial agents.										
40			Evaluation of microbial stability of formulations.										
41			Growth of animal cells in culture, general procedure for cell culture, Primary, established & transformed cell cultures.										
42	11	V	Application of cell cultures in pharmaceutical industry and research.										
43			MCQ										
44			MCQ										
45			MCQ										