

LESSON PLAN

Class: B. Sc. Biotechnology

Semester: 6th sem

Paper XIII: Microbial Biotechnology

Session: 2023-24

S. No	Week	Topic
1.	01/01/24-06/01/24	General concept and Historical landmarks of Microbial Biotechnology
2.	08/01/24-13/01/24	Screening and Isolation of Microorganisms
3.	15/01/24-20/01/24	Industrially important microbes, their screening and isolation, enrichment culture.
4.	22/01/24-27/01/24	Strain improvement- bacterial genetics, mutant selection, recombination
5.	29/01/24-03/02/24	Recombinant DNA technology. Strain preservation and maintenance.
6.	05/02/24-10/02/24	Nutrition and cultivation of microorganisms: Basic nutrition and metabolism
7.	12/02/24-17/02/24	Natural and Synthetic media, Sterilization techniques, Microbial growth kinetics.
8.	19/02/24-24/02/24	Fermentation types –Continuous, Batch fed culture, Solid state and submerged.
9.	26/02/24-02/03/24	Quantification of growth, thermodynamics of growth, effect of different factors on growth.
10.	04/03/24-09/03/24	Fermentation concepts and types. Microbial Fermenters/Bioreactors: Basic design of fermenters.
11.	11/03/24-16/03/24	Physco-chemical standards used in bioreactors (agitation, aeration, ph, temp., dissolved oxygen etc.).
12.	18/03/24-22/03/24	Types of fermenters stirred tank, bubble column, airlift
13.	23/03/24-31/03/24	Holi Break
14.	01/04/24-06/04/24	Process Development and Downstream Processing: Shake flask fermentation, scale up of the process.
15.	08/04/24-13/04/24	Downstream processing – Separation of particles, disintegration of cells, extraction, concentration,
16.	15/04/24-20/04/24	Purification and drying of the products.
17.	22/04/24-30/04/24	REVISION AND QUERIES

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