

**BHAI GURDAS INSTITUTE OF ENGINEERING AND TECHNOLOGY**  
**SANGRUR**  
**Department of Food Technology**

**LESSON PLAN**

**Name: Er. Noopur Khare**  
**Branch/ Semester: 6<sup>th</sup> Sem.**

**Subject name: Fermentation Technology**  
**Subject code: BTFT 323-19**

<b>Sr. No.</b>	<b>Lecture no.</b>	<b>Topics to be covered</b>	<b>Planned on</b>	<b>Covered on</b>	<b>Remarks</b>
1.	L-1	Introduction, history, scope and principle components of fermentation	<b>1<sup>st</sup> Week</b>	Black board & PPT	
2.	L-2	Types of fermentation		Black board	
3.	L-3	Growth kinetics during fermentation		Black board	
4.	L-4	Isolation & screening of microorganisms used in fermentation	<b>2<sup>nd</sup> Week</b>	Black board	
5.	L-5	Media for industrial fermentation		Black board & PPT	
6.	L-6	Criteria used in media formulation		Black board & PPT	
7.	L-7	Sterilization, raw materials.	<b>3<sup>rd</sup> Week</b>	Black board & PPT	
8.	L-8	Fermenter Design: bioreactor configuration, design features		Black board	
9.	L-9	Criteria in Fermenter design, requirement for aeration and mixing, energy transfer		Black board & PPT	
10.	L-10	Other fermenter designs- tube reactors	<b>4<sup>th</sup> Week</b>	Black board	
11.	L-11	Packed bed reactors		Black board & PPT	
12.	L-12	Fluidized bed reactors		Black board	
13.	L-13	Cyclone reactors	<b>5<sup>th</sup> Week</b>	Black board & PPT	

14.	L-14	Trickle flow reactors		Black board	
15.	L-15	Measurement and control of fermentation parameters.		Black board & PPT	
16.	L-16	Fermentation Systems: Batch and Continuous system, Fed batch culture	<b>6<sup>th</sup> Week</b>	Black board	
17.	L-17	Solid substrate fermentation		Black board & PPT	
18.	L-18	Production and recovery of primary and secondary metabolites		Black board	
19.	L-19	Industrial alcohol, citric acid	<b>7<sup>th</sup> Week</b>	Black board & PPT	
20.	L-20	Acetic acid, lactic acid		Black board	
21.	L-21	Acetone- butanol fermentation		Black board & PPT	
22.	L-22	Amino acids- lysine & glutamic acid production	<b>8<sup>th</sup> Week</b>	Black board	
23.	L-23	Enzymes, antibiotics (penicillin and tetracycline)		Black board & PPT	
24.	L-24	Oriental fermented foods.		Black board	
25.	L-25	Methods of separation, purification and formulation of metabolites		Black board & PPT	
26.	L-26	Principle of over-production of primary and secondary metabolites with relevant examples	<b>9<sup>th</sup> Week</b>	Black board	
27.	L-27	Application of fermentations for value-addition		Black board & PPT	
28.	L-28	Waste product types and utilization for production of useful products		Black board	

29.	L-29	Waste treatment systems	<b>10<sup>th</sup> Week</b>	Black board & PPT	
30.	L-30	Aerobic and anaerobic systems for wastes from industry.		Black board	

**(Course Incharge)**