

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

**LESSON PLAN**

Name: Er. Usman Ahmed  
 Branch/ Semester: 4<sup>th</sup> Sem.

Subject name: Heat & Mass Transfer  
 Subject code: BTFT 227-19

Sr. No.	Lecture no.	Topics to be covered	Date /week	Teaching aids	Remarks
1.	L-1	<b>Unit I:</b> Heat transfer in food processing operations	<b>1<sup>st</sup> week</b>	Black board , PPT	
2.	L-2	mean temperature difference		Black board , PPT	
3.	L-3	Fourier's law of heat conduction,	<b>2<sup>nd</sup> week</b>	Black board	
4.	L-4	one dimensional steady state heat conduction equation for flat plate, hollow cylinder, hollow sphere		Black board	
5.	L-5	Thermal conductivity measurement	<b>3<sup>rd</sup> week</b>	Black board , PPT	
6.	L-6	effect of temperature on thermal conductivity		Black board	
7.	L-7	conduction through liquids		Black board	
8.	L-8	<b>Unit II:</b> concept of heat transfer by convection	<b>4<sup>th</sup> week</b>	Black board	
9.	L-9	natural and forced convection		Black board	
10.	L-10	transition and turbulent conditions		Black board	
11.	L-11	equations for natural convection	<b>5<sup>th</sup> week</b>	Black board , PPT	
12.	L-12	Concept of thermal Radiations and related laws		Black board , PPT	
13.	L-13	radiation between surfaces.		Black board , PPT	
14.	L-14	<b>Unit: 3</b> Heat Exchangers & classifications	<b>6<sup>th</sup> week</b>	Black board , PPT	

15.	L-15	Diffusion and mass transfer coefficients	4 <sup>th</sup> week	Black board , PPT	
16.	L-16	molecular and eddy diffusion in gases and liquids		Black board	
17.	L-17	diffusion in solids, concept of mass transfer coefficients.	7 <sup>th</sup> week	Black board	
18.	L-18	<b>Unit IV: Absorption and Distillation</b>	8 <sup>th</sup> week	Black board , PPT	
19.	L-19	Methods of distillation		Black board , PPT	
20.	L-20	Extraction and leaching	9 <sup>th</sup> week	Black board	
21.	L-21	Differential contact extraction equipment		Black board	
22.	L-22	Leaching equipments & its types	10 <sup>th</sup> week	Black board	

(Course Incharge)