

**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: Food Engineering**  
**Subject code: BTFT 224-19**

Sr. No.	Lecture no.	Topics to be covered	Date /week	Teaching aids	Remarks
1.	L-1	<b>Unit I:</b> Introduction to Food Engineering	<b>1<sup>st</sup> Week</b>	Black borad & PPT	
2.	L-2	units and dimensions		Black borad & PPT	
3.	L-3	Material and energy balance	<b>2<sup>nd</sup> Week</b>	Black borad	
4.	L-4	Numericals		Black borad	
5.	L-5	total mass balance, component mass balance		Black borad & PPT	
6.	L-6	problems related to material balance,	<b>3<sup>rd</sup> Week</b>	Black borad	
7.	L-7	heat balance and energy balance.		Black borad	
8.	L-8	<b>Unit II:</b> fluid statics and fluid dynamics	<b>4<sup>th</sup> Week</b>	Black borad	
9.	L-9	Bernoulli equation & numericals		Black borad & PPT	
10.	L-10	Newtonian and non-Newtonian fluids,	<b>5<sup>th</sup> Week</b>	Black borad	
11.	L-11	measurement of pressure and velocity;		Black borad	
12.	L-12	Liquid transport system & pumps		Black borad & PPT	
13.	L-13	<b>Unit III:</b> Thermal Process introduction	<b>6<sup>th</sup> Week</b>	Black borad	
14.	L-14	commercially sterile concept		Black borad & PPT	
15.	L-15	concept of D, F and Z values, reference F value,	<b>7<sup>th</sup> Week</b>	Black borad & PPT	
16.	L-16	effect of temperature on thermal inactivation of microorganisms		Black	

17.	L-17	thermal process calculation for canned foods	<b>8<sup>th</sup> Week</b>	Black borad & PPT	
18.	L-18	calulation of processing time in continuous flow systems.		Black borad	
19.	L-19	<b>Unit IV: Refrigeration:</b> introduction	<b>9<sup>th</sup> Week</b>	Black borad	
20.	L-20	refrigeration cycle		Black borad	
21.	L-21	components of refrigeration systems	<b>10<sup>th</sup> Week</b>	Black borad	
22.	L-22	Freezing time calculations		Black borad & PPT	
23.	L-23	Boiler design & Working	<b>11<sup>th</sup> Week</b>	Black borad & PPT	
24.	L-24	Steam properties		Black borad	

(Course Incharge)